



B.C. Connectivity Report 2024

PREPARED BY MINISTRY OF CITIZENS' SERVICES



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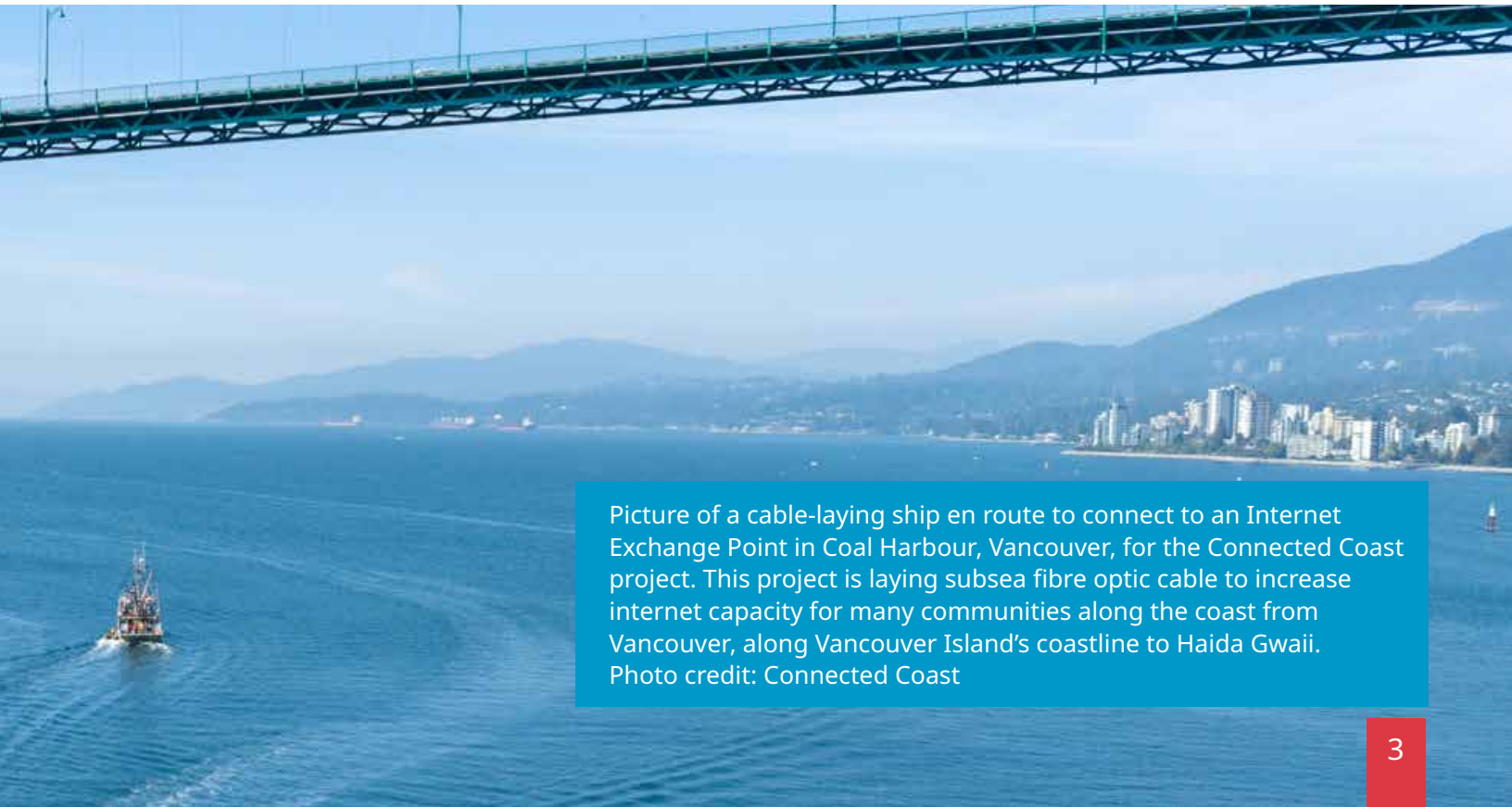
Front and back cover photograph of farmlands in the Okanagan Valley.

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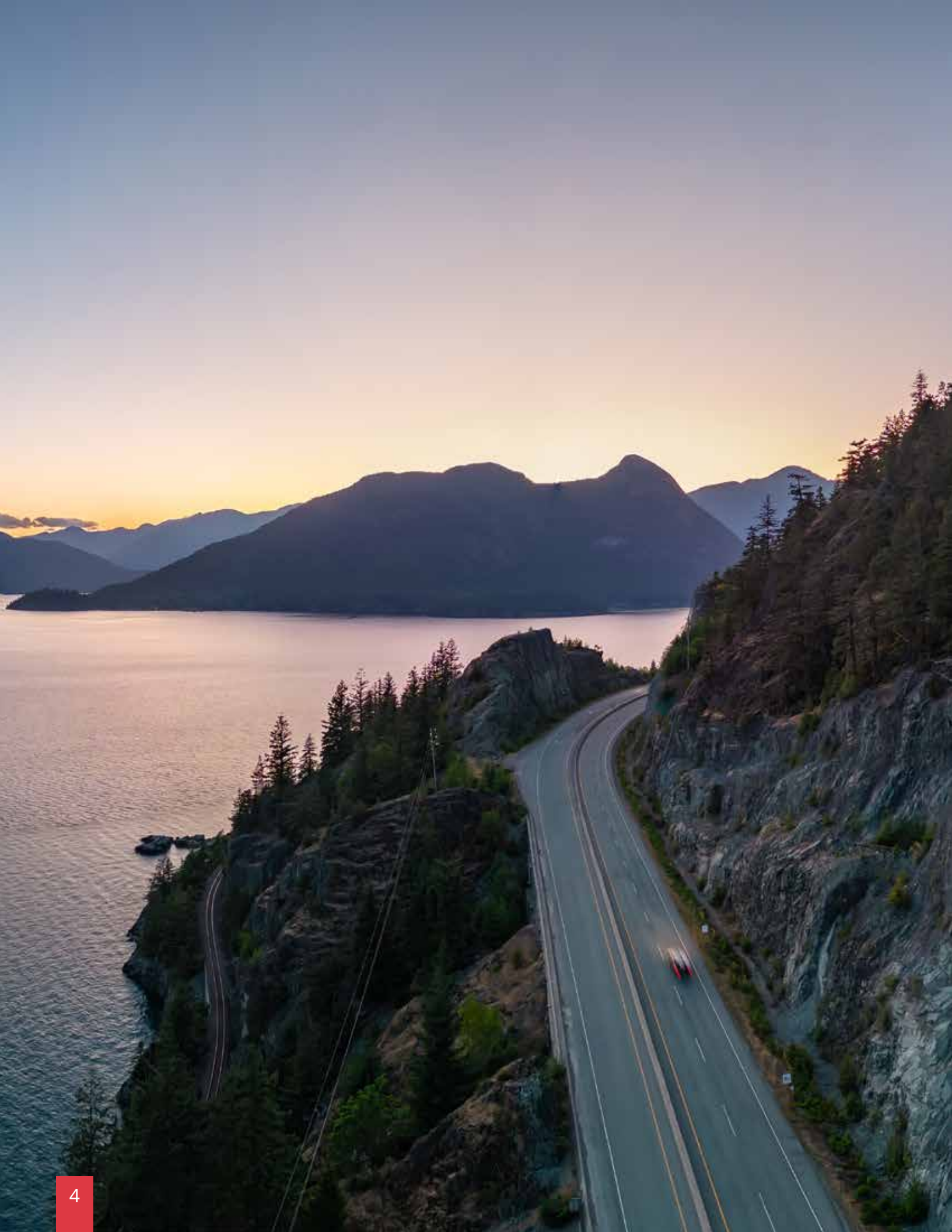


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Picture of a cable-laying ship en route to connect to an Internet Exchange Point in Coal Harbour, Vancouver, for the Connected Coast project. This project is laying subsea fibre optic cable to increase internet capacity for many communities along the coast from Vancouver, along Vancouver Island's coastline to Haida Gwaii. Photo credit: Connected Coast



MESSAGE FROM GEORGE CHOW, MINISTER OF CITIZENS' SERVICES



The BC Connectivity Report 2024, from the Ministry of Citizens' Services, highlights the importance of high-speed internet and cellular services in British Columbia.

Since 2017, our government has allocated \$584 million in connectivity investments. This includes expanding connectivity in B.C. through an \$830 million agreement with the Government of Canada (\$415 million each), as well as through funding from internet service providers, the private sector and other sources.

This report builds on the [BC Connectivity Report 2022](#) and compares B.C. with other jurisdictions in Canada. The Province's commitment to connect all homes to high-speed internet services by 2027 is outlined in the [StrongerBC Economic Plan, Good Lives in Strong Communities Plan](#) and the [Declaration Act Action Plan](#).

In 2017, the federal government estimated that 57 per cent of homes in rural B.C. had access to high-speed internet. As of January 2024, that number has increased to 76.5 per cent. When all current funded projects are complete, that figure will increase to 91 per cent and we are on track to connect all remaining homes by 2027.

In 2023, the Province committed another \$75 million to support the expansion of cellular services along an additional 550 km of primary and secondary highways in B.C. This increases public safety and means cell phone users will have access to emergency services when needed.

Expanding connectivity means people in every corner of B.C. can access employment and education opportunities, healthcare, business and financial services, and connect to family and friends. Our investments ensure that people and businesses in communities throughout B.C. have the connectivity services they need to thrive.

Honourable George Chow
Minister of Citizens' Services

A large helicopter is shown in flight against a blue sky with scattered white clouds. The helicopter is carrying a large, dark-colored tower component, likely for a cellular tower, suspended from its hoist. The tower is oriented vertically, with its base pointing downwards. The helicopter's rotors are visible, and the tail boom is also visible. The overall scene suggests a construction or transport operation in a remote area.

ABOUT THE REPORT

This year's B.C. Connectivity Report compares British Columbia to other provinces in Canada and charts the government's progress to connect all households to high-speed internet services by 2027. This report builds on the [B.C. Connectivity Report 2022](#) and shows progress over time.

The report focuses on three factors of connectivity: access, affordability, and speed, for both high-speed internet and cellular services. These factors allow us to explore connectivity services available to households across the province, the actual speeds experienced in the home or business, and how affordable services are.

LIMITATIONS

Data reflected in this report is primarily from the Canadian Radio-television and Telecommunications Commission (CRTC) Communications Market Reports (accessed January 2024) which analyzes data to 2022. Other sources are listed in the resources section.

Information on connectivity is presented as a snapshot in time, allowing for comparison between other jurisdictions across Canada. Progress may have been made in connectivity for all areas since this data was collected.

Connectivity analysis for households on First Nation reserves in this report is based on total population and dwellings on reserves according to Statistics Canada census data from 2021 and presented by the CRTC.

Note: CRTC data includes connectivity for households on First Nation reserves and historic Treaty Nations in B.C., but does not include households on [Modern Treaty Nation lands](#). Project data reported on the following pages in the blue boxes is from the Connectivity Division in the Ministry of Citizens' Services and includes households on Modern Treaty Nation lands.

CRTC data does not include households served by satellite services, or pending satellite programs, as part of internet expansion progress.

Construction of cellular towers with the aid of a helicopter on remote stretches of Highway 16 for a Rogers Communications' project to bring cellular service to 252 km of the Highway of Tears. Photo credit: Rogers Communications Inc.

PRIMARY RESOURCES

The report uses data from the federal government, as well as speed data from the Canadian Internet Registration Authority (CIRA) and from Speedtest by Ookla. Project data provided in the blue boxes is from analysis by the Connectivity Division. Information in the grey boxes are from other sources as cited. Resources include:

- CRTC Communications Market Reports
 - [2024 Communications Market Reports – Current trends](#)
- Canadian Internet Use Survey
 - [2020 and 2022 Canadian Internet Use Survey](#)
- CIRA
 - 2023 Q3 analysis
- [Consumer Price Index \(2024\)](#)
- Speedtest by Ookla mobile data
 - [2024 – Speedtest Global Index](#)
- Data analysis and funded project data provided by the Connectivity Division in the Ministry of Citizens' Services

METHODOLOGY

The B.C. Connectivity Report 2024 analyzes quantitative data from federal government reports and surveys, CIRA and the Speedtest Global Index.

This report compares connectivity in B.C. to other provinces across Canada which operate under a shared federal regulatory environment. Every province is different and has unique challenges for connectivity expansion. For example, B.C. has particularly challenging terrain including mountains, rugged coastline and extensive forested areas, which can make the expansion of services to rural and remote areas challenging and costly.

Further context, definitions and updates on trends and current government funding programs are included in boxes throughout the report. Blue boxes provide current statistics from the government funding programs and show how the B.C. government is meeting its connectivity goals.

National universal service objective

In Canada, telecommunications are federally regulated by the CRTC. In 2016, the CRTC established a universal service objective that Canadians in urban areas, as well as rural and remote areas, should have access to voice services and broadband internet access services on both fixed and mobile wireless networks.

To measure the achievement of this objective, the CRTC established several criteria, including:

- Canadian residential and business fixed broadband internet access service subscribers should be able to access speeds of at least 50 megabits per second (Mbps) download and 10 Mbps upload, and be able to subscribe to a service offering with an unlimited data allowance; and
- The latest generally deployed mobile wireless technology should be available not only in Canadian homes and businesses, but on as many major transportation roads as possible in Canada.

Government funding programs support the initial build cost for service providers to expand their services to hard-to-reach areas to meet the CRTC's universal service objective.

Source: [CRTC website](#).



EXECUTIVE SUMMARY

The B.C. Connectivity Report 2024 focuses on three factors of connectivity for broadband and cellular services: access, affordability and speed.

The report provides a snapshot in time of the landscape of connectivity in British Columbia and how B.C. compares to other provinces in Canada. The report also shows how the Province is tracking to meet its goals to expand high-speed internet services to all homes by 2027 and expand cellular services on primary and secondary highways.

Broadband

Providing access to internet services of at least 50/10 Mbps to every household, inclusive of rural areas and First Nation communities, is a B.C. government priority. Report highlights include:

- B.C. is a leader compared to other provinces in Canada for overall access to internet speeds of 50/10 Mbps, 200+ Mbps and 1 Gbps.
- B.C. is above the Canadian average for providing access to high-speed internet in rural areas and ranks in the top five provinces in Canada for access on First Nation reserves.
- While urban areas are nearly completely served in B.C., some rural areas and First Nation reserves remain under-served with high-speed internet services. Access is increasing in these areas as a result of public and private investment.
- B.C. has the third lowest average price in Canada in 2022 for a 50/10 Mbps internet service subscription with unlimited data at \$68/month. However, minimum subscription prices are only available in limited urban areas.

Cellular

Cellular is increasingly important as the world becomes more mobile, allowing us to work, connect and play on the move, as well as being able to respond to emergency situations while traveling. Report highlights include:

- B.C. is a leader in 5G expansion by per cent of population compared to other provinces in Canada. Access to 5G services is higher in urban areas, compared to rural areas or on First Nation reserves, but access in all areas is increasing.
- LTE mobile coverage is high across Canada and B.C. - 99.12 per cent of the population of B.C. has access to an LTE service.
- Cellular coverage on major B.C. highways ranks below the Canadian average. Many highway stretches lack the available power for cellular towers.
- Prices for cellular plans have decreased in B.C. since 2017. However, prices in B.C., as well as in many provinces in Canada, rose in 2022.
- Cellular speeds in B.C. remain largely on par with the Canadian average.

Cellular definitions

- **LTE:** Long-Term Evolution is referred to as fourth generation of cellular and is the current standard, widely deployed in most mobile networks.
- **5G:** 5G is an access technology referred to as the fifth generation. These networks promise to deliver faster speeds, lower latency, and gains in spectral efficiency than prior generational networks, among other benefits.

Source: [CRTC](#)



Conclusion

Since the last [B.C. Connectivity Report in 2022](#), there has been an increase in access for both broadband and 5G cellular services. Both affordability and speed have also seen positive changes for some internet subscribers, potentially due to increased competition and the upgrade and expansion of networks. After a period of decline in cellular prices, many provinces in Canada, including B.C., saw an increase in prices in 2022.

Significant strides have been made to advance connectivity access in the province through government funding programs, such as the [Connecting Communities BC program](#), as well as from the private sector, federal government and other sources. Government funding programs support improving access for internet services until broadband services expand to all areas of the province.

While B.C. leads all other provinces in Canada in the availability of 5G cellular services and access to LTE service is high for populated areas, there are some rural and remote sections of highway in the province without cellular service. Some of these rural stretches do not have the power required for cellular towers and B.C.'s topography can make service expansion challenging and costly in rural and remote areas.

Government connectivity funding programs

Everyone in British Columbia deserves to have access to reliable high-speed internet. That's why the Province is making significant investments towards its goal of connecting all rural and First Nation households to high-speed internet services by 2027.

On March 8, 2022, the [Governments of British Columbia and Canada announced an agreement to invest up to \\$830 million](#) (\$415 million each) to support expanding broadband infrastructure to the remaining households in the province that can be reached with a terrestrial solution.

The current provincial connectivity funding program, [Connecting Communities BC](#), offers funding to service providers, and local or First Nation governments working with service providers, to expand high-speed internet services for under-served areas. This builds on progress from the Province's previous funding program, [Connecting British Columbia](#), administered by Northern Development Initiative Trust.

From 2017 to 2024, 208 projects have been approved for provincial funding. These include funding for high-speed internet and cellular projects, as well as regional connectivity planning. These projects will expand internet services to over 95,000 homes and provide cellular services to 532 km of highway when complete. As of April 2024, more than half of these projects are complete.

In March 2023, the B.C. government allocated an additional \$75 million to expand cellular services along a further 550 km of primary and secondary highways by 2027. This funding is on top of \$15 million allocated to cellular projects and is administered through the [Cellular Expansion Fund](#) by Northern Development Initiative Trust.

Federal funding programs, such as Canada's Universal Broadband Fund and the CRTC's Broadband Fund support connectivity across Canada, including in B.C.

BROADBAND

Broadband can be defined as a high-speed connection to the internet that allows for the transmission of large amounts of data.

The CRTC's universal service objective is for all households in Canada to have access to high-speed internet services of 50/10 Mbps or above and the ability to subscribe to an unlimited data plan. An unlimited data plan means consumers of internet services do not have a data limit for usage, which gives subscribers the freedom to use as little or as much data as they like or need.

The speed and quality of internet connectivity in homes depends in part on the capacity of the broadband infrastructure connecting the user to the wider

internet. This infrastructure consists of two main parts – backbone or transport, and last mile. Investments in both backbone and last mile infrastructure are required to bring high-speed internet to rural, remote and First Nation communities.

Note: This report tracks numbers related to 50/10 Mbps access for any plan – which includes both unlimited plans as well as those with a data cap.

Access, affordability and speed

Access, affordability and speed are three main factors for measuring broadband in this report. They are defined as follows:

- **Access:** The ability of a residence to subscribe to an internet service with a certain download and upload speed threshold.
- **Affordability:** The cost of internet service plans.
- **Speed:** The measurement in bits per second broken out by download and upload speed. Here, a common unit is “Megabits per second” or Mbps (one million bits per second).
 - Download speed is the speed at which data (e.g., files, pictures and movies) is delivered from the internet to users.
 - Upload speed is the speed at which data travels from users to the internet.

The National Broadband Internet Service Availability Map

The [National Broadband Internet Service Availability Map](#) is published by Innovation, Science and Economic Development Canada. The map shows broadband availability across the country based on reported speeds by service providers.

Defining backbone and last mile

Backbone, or transport, infrastructure consists of high-capacity lines (generally fibre optic lines) that can transmit large amounts of data from Internet Exchange Points in major cities, such as Vancouver, Seattle or Calgary, to community points.

Last mile infrastructure connects from a service provider's community point of presence to households and businesses. Last mile can be achieved using multiple technologies including both wired and wireless methods, such as fibre, digital subscriber lines (DSL), coaxial cable and fixed wireless radio.

Examples of backbone and last mile projects

B.C. has made progress extending its backbone network in recent years due to government funding programs as well as private investment. Examples of backbone network projects partly funded by the Province include the [Connected Coast](#) project, which is currently under construction, Tahltan Nation Development Corporation's transport fibre project, which is nearly complete, and Columbia Basin Broadband Corporation's Slocan Valley Fibre project, which is complete. Transport projects like these provide a path for high-speed internet from a central Internet Exchange Point to carrier networks, expanding services to communities that need it.

The Connected Coast project, a partnership between CityWest and the Strathcona Regional District uses sub-sea fibre optic cable along the coastal seabed to bring high-speed internet to communities along the coast, enabling connections for local last-mile projects and providers that in turn can reach tens of thousands of households with high-speed internet services.

Tahltan Nation Development Corporation's transport fibre project will bring increased broadband capability to 12 communities including Dease Lake and Iskut in Northwest B.C., and the Columbia Basin Broadband Corporation's Slocan valley fibre project has brought much needed internet capacity to the region.

B.C. funding programs have also supported many last mile projects to bring internet to the home, such as a project in six communities around northern Kootenay Lake led by Kaslo InfoNet Society, and a TELUS project to bring high-speed internet to 11 rural, remote and Indigenous communities between Yale and Ruby Creek in the Fraser Valley.

These projects are just a few of the 208 projects that have been selected for provincial funding since 2017. A map of announced projects funded by the Province can be found on the [Connectivity in B.C. web pages](#).

Internet speeds

As many British Columbians and their families work and learn from home, stream entertainment services and manage many smart devices in one household, the amount of internet speed available in the home becomes important and determines the usability of the service.

The extent to which a home is connected to high-speed internet for all users is a function of download and upload speeds that are available, as well as the number

of users and devices on a network. The chart below broadly captures the capability of various internet speeds in the home.

Note: these use cases assume a latency of less than 50 milliseconds. Latency is a measure of the time it takes for your device to communicate with a server and receive a response back. A low latency provides a smoother user experience.

Minimum download speed/ upload speed	Use cases
25/5 Mbps	<ul style="list-style-type: none"> 1-3 devices should be able to stream in high-definition and 4K video, stream music and work from home.
50/10 Mbps	<ul style="list-style-type: none"> 2-4 devices should be able to stream in 4K – meaning 2-4 tablets, laptops or TVs should be able to enjoy ultra-high-definition videos and shows. 3-5 smart devices should be able to run. Online games with multiple players should function with little to no delay. Big files from 500Mb to 2Gb should be downloaded quickly. Video conferencing calls should take place easily and with little to no delay.
100/100+ Mbps	<ul style="list-style-type: none"> 5+ devices should be able to stream in 4K, and 5+ smart-home devices can be supported as well. Online games with multiple players should function with little to no delay. Larger files over 2Gb should be downloaded quickly. Video conferencing calls should take place very easily with little to no delay.

*Note: Minimum speed requirements are subjective, applications may technically work with lower speed connections, but user experience is poor. Use cases shown provide various individual examples of the possibilities with various download/upload speeds.

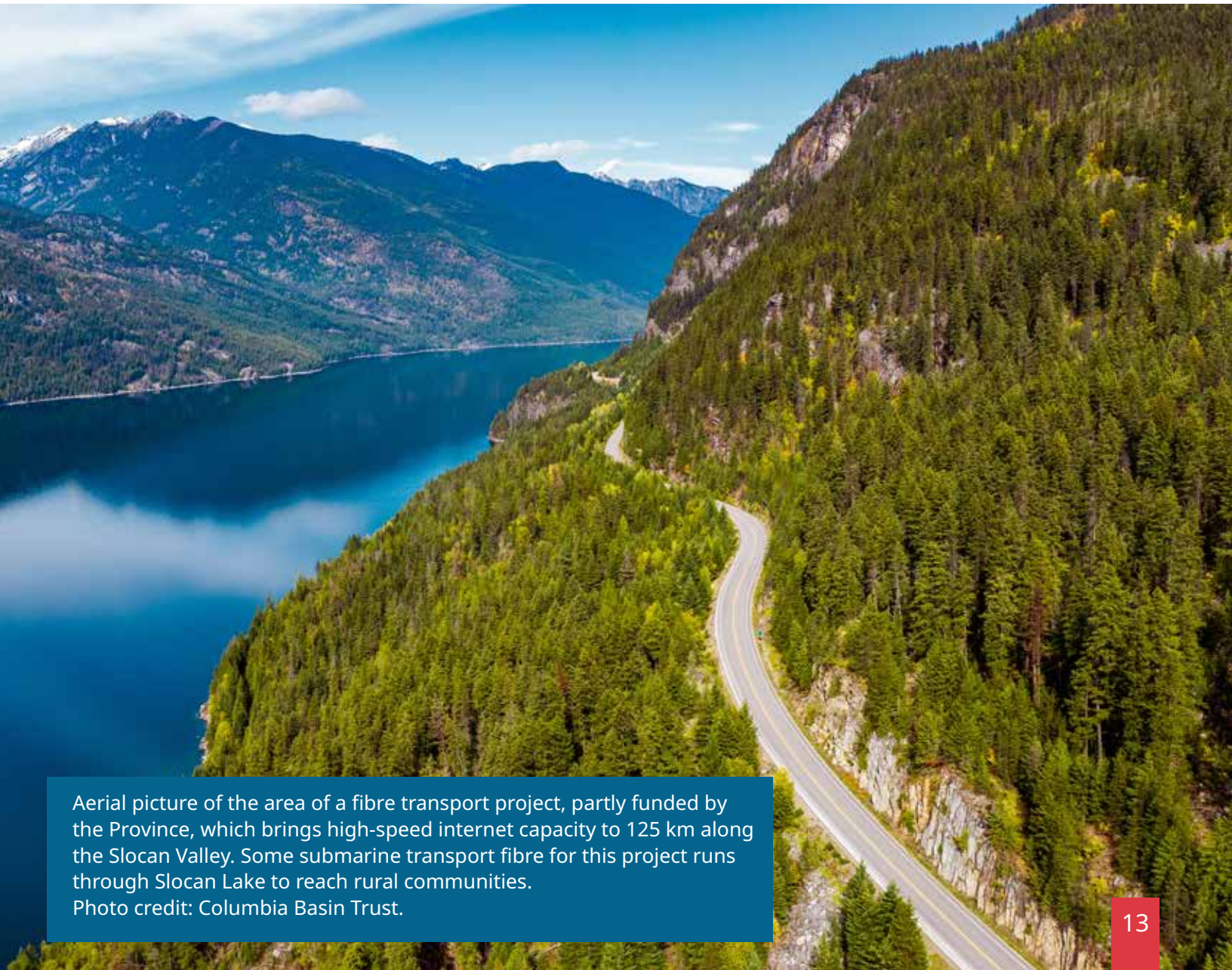
Source: CIRA Web Application Connection Minimums

Broadband access

Access is defined in this report as the ability for a household to subscribe to high-speed internet services.

Broadband internet access highlights

- B.C. has the second highest access rate for 50/10 Mbps in Canada, second only to the province of Quebec.
- B.C. leads other provinces in Canada for access to higher internet speeds of 200+ Mbps and 1 Gbps.
- While urban areas are nearly completely served in B.C. with 50/10 Mbps, some rural areas and First Nation reserves remain under-served. Access is increasing in these areas over time and since the [B.C. Connectivity Report 2022](#).
- B.C. is a leader in Canada for providing access to gigabit speeds in rural areas and on First Nation reserves, but these areas have less access than in urban areas.
- Low Earth Orbit (LEO) satellite services are evolving rapidly. Service is now available for LEO satellite in all areas of British Columbia.



Aerial picture of the area of a fibre transport project, partly funded by the Province, which brings high-speed internet capacity to 125 km along the Slocan Valley. Some submarine transport fibre for this project runs through Slocan Lake to reach rural communities.
Photo credit: Columbia Basin Trust.



Access to broadband speeds of 50/10 Mbps

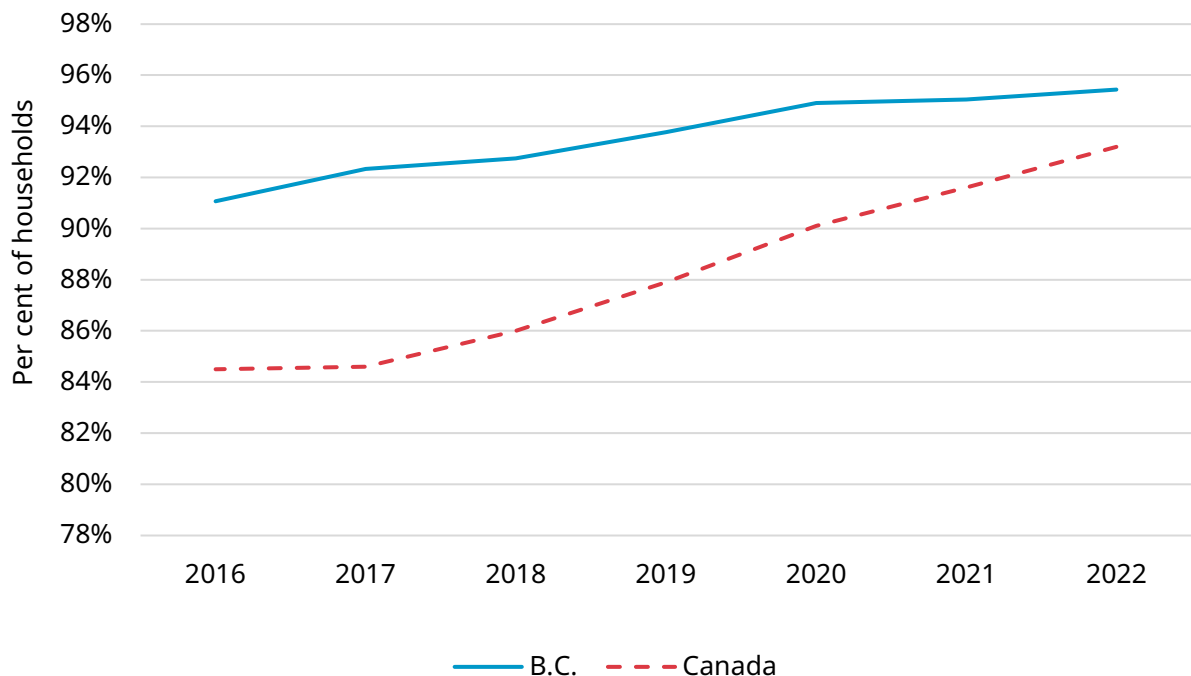
Access to internet speeds of 50/10 Mbps continues to increase for B.C. and Canada as service providers expand their networks, and provincial and federal government funding programs work to support the expansion of connectivity into more remote and difficult-to-reach areas.

B.C. has been a leader in access to 50/10 Mbps in Canada since 2016, and has tracked consistently above

the Canadian national access rate over time. In 2022, 95.43 per cent of households in B.C. had access to 50/10 Mbps in 2022, an increase from 94.91 per cent of homes in 2020.

Note: CRTC data throughout this section tracks progress to 2022 and does not include homes served by satellite solutions.

Households with access to 50/10 Mbps



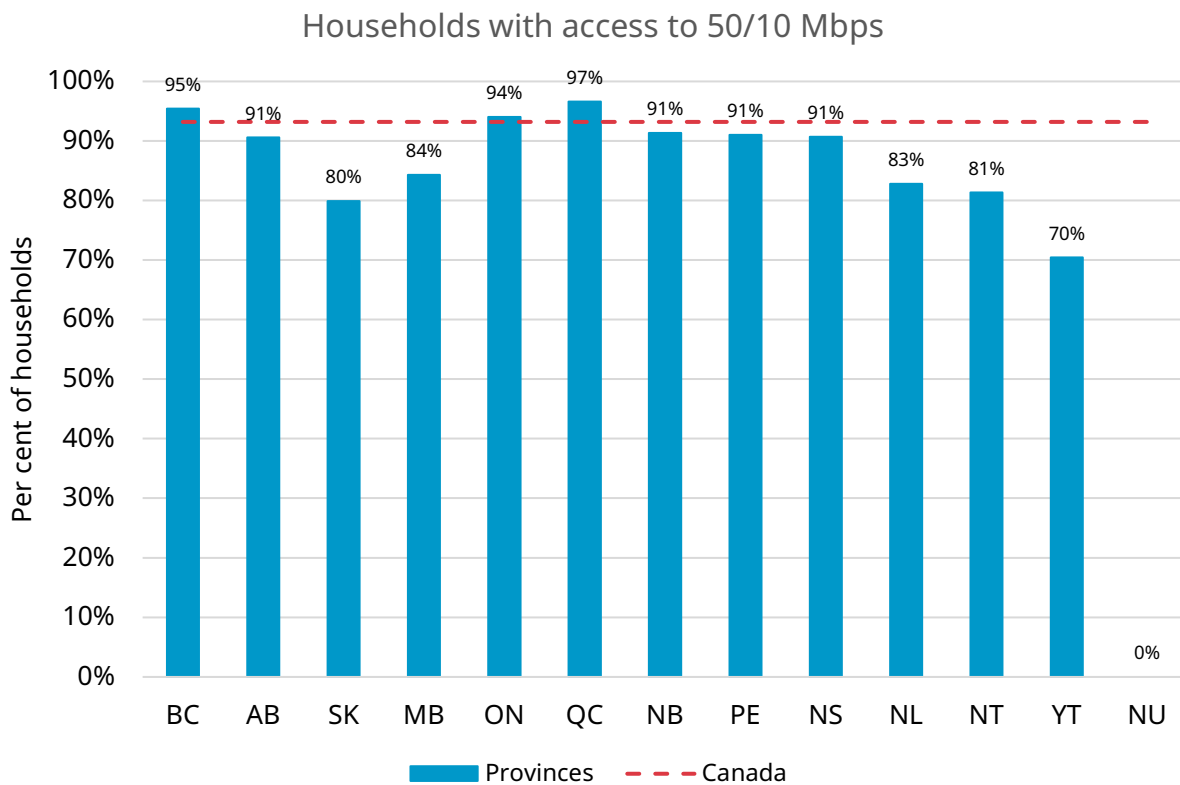
Source: CRTC Communications Market Report 2024



Access to broadband speeds of 50/10 Mbps by province

Quebec and B.C. lead other provinces in Canada for access to 50/10 Mbps with 96.59 and 95.43 per cent of households with access to high-speed internet respectively. Quebec, B.C. and Ontario are the only provinces with high-speed internet coverage above the Canadian national access rate of 93.2 per cent.

Note: Quebec is reporting 100 per cent of homes with access to high-speed internet services. Remaining homes without a terrestrial solution (such as a fibre or cable connection) will be served via a satellite program.



Source: CRTC Communications Market Report 2024

Tracking to provide high-speed internet for all households in B.C. and Canada

The federal government set a target for all homes in Canada to be connected to high-speed internet services by 2030. The B.C. government accelerated that goal to connect all households in the province by 2027 and some other provinces also have set their own targets. [Quebec set a goal to connect every household to high-speed internet](#) by September 2022, and is running a satellite program for homes not served by terrestrial solutions. Ontario and Prince Edward Island have a target to connect all households in their provinces by 2025.

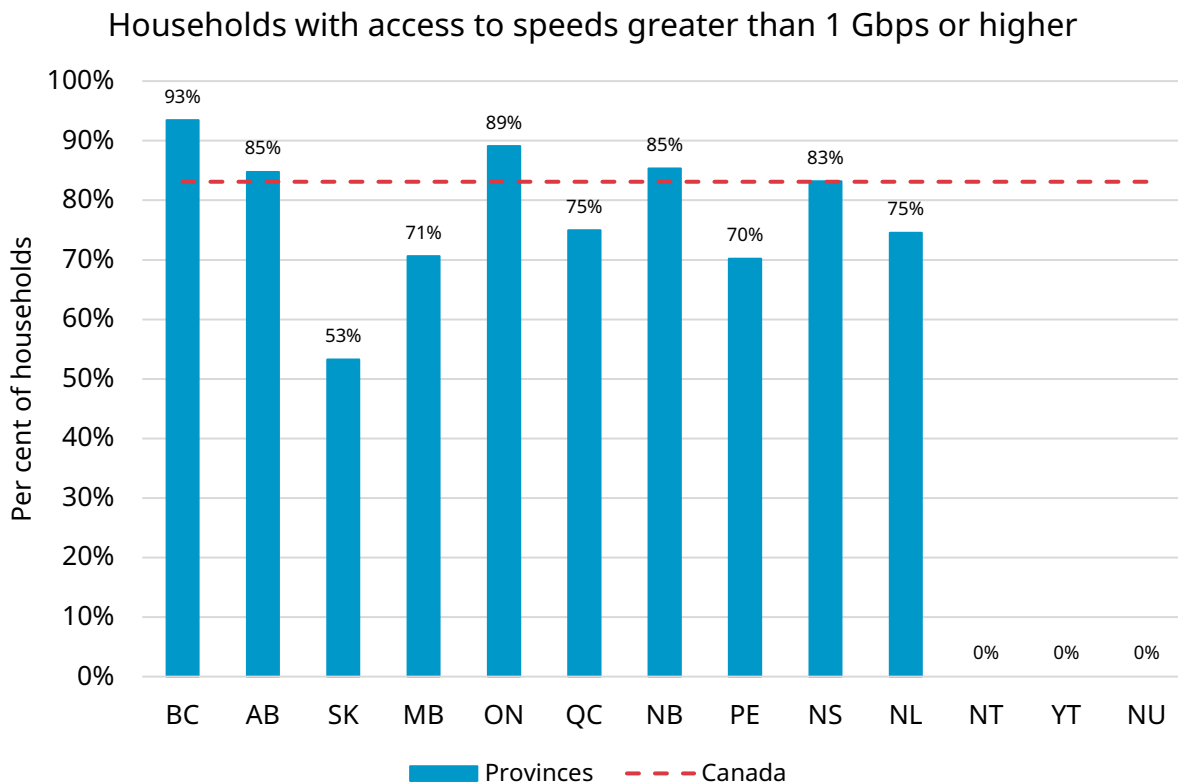
At time of publication, 96.1 per cent of B.C. households have access to speeds of 50/10 Mbps. When all current projects are complete, that figure will rise to 98.4 per cent*. A mix of technologies including fibre, fixed wireless, coaxial cable and satellite will be used to connect the remaining under-served households to high-speed internet services by 2027.

*Source: Connectivity Division, Ministry of Citizens' Services.

Access to higher broadband speeds of 1 Gbps by province

Access to higher speeds of 1 Gbps is increasing both in B.C. and across Canada as infrastructure expands and older networks are upgraded. B.C. leads other provinces for access to internet services at higher speeds with 94.11 per cent of British Columbians with access to

internet speeds of 200 Mbps or higher, and 93.44 per cent with access to speeds of 1 Gbps. As infrastructure continues to expand and technology improves, higher internet speeds will increasingly become more available across the province.



Source: CRTC Communications Market Report 2024

Connecting rural households to high-speed internet

Many of the remaining under-served households in B.C. are in rural and remote communities. Government programs support expanding internet services in rural areas where there may not be a private sector business case and progress has been made over time in these areas. In 2017, 57 per cent of households in rural B.C. had access to 50/10 Mbps. In January 2024, that number was 76.5 per cent of households. When all current projects are complete, that number will rise to 91 per cent of rural households with access to high-speed internet services. Future projects will connect the remaining under-served households.

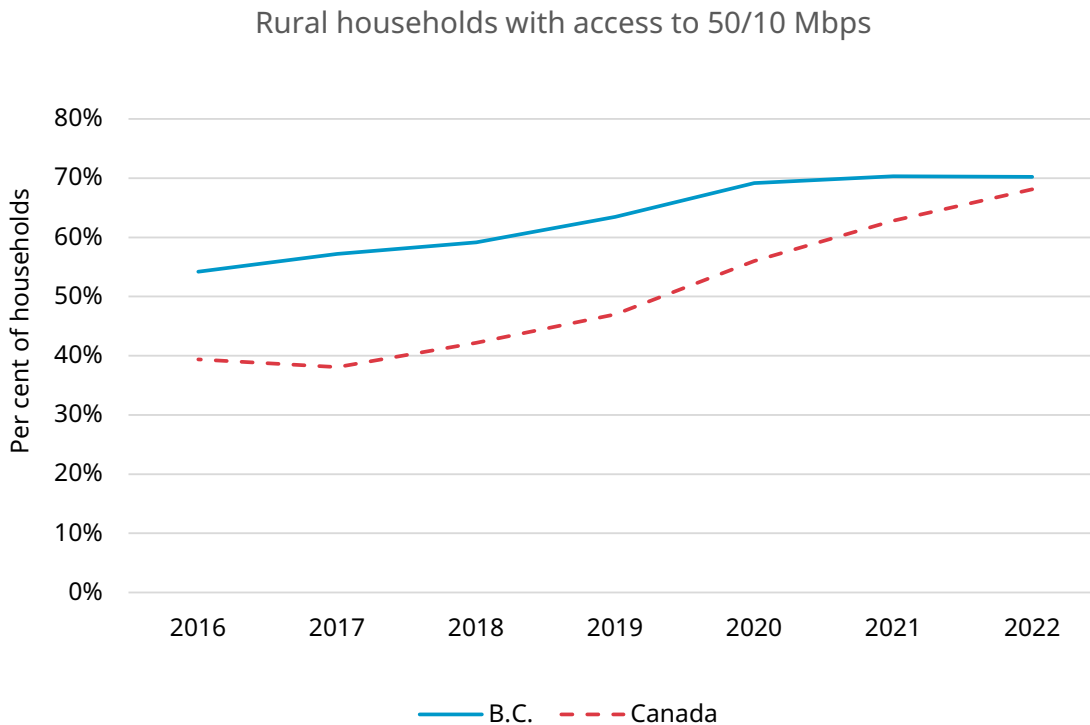
Source: Connectivity Division, Ministry of Citizens' Services.

Access to broadband speeds of 50/10 Mbps in rural areas

Providing access to internet speeds of 50/10 Mbps can be more challenging in rural and remote areas.

B.C. has tracked above the Canadian national rate from 2016 to 2022 for high-speed internet access in rural areas. For both B.C. and Canada, access has increased in rural areas over time.

Rural households (definition below) make up approximately 16 per cent of total households in British Columbia. In 2022, 70.2 per cent of households in rural B.C. had access to high-speed internet services, compared to 69.19 per cent in 2020.



Source: CRTC Communications Market Report 2024

CRTC definition of a rural area

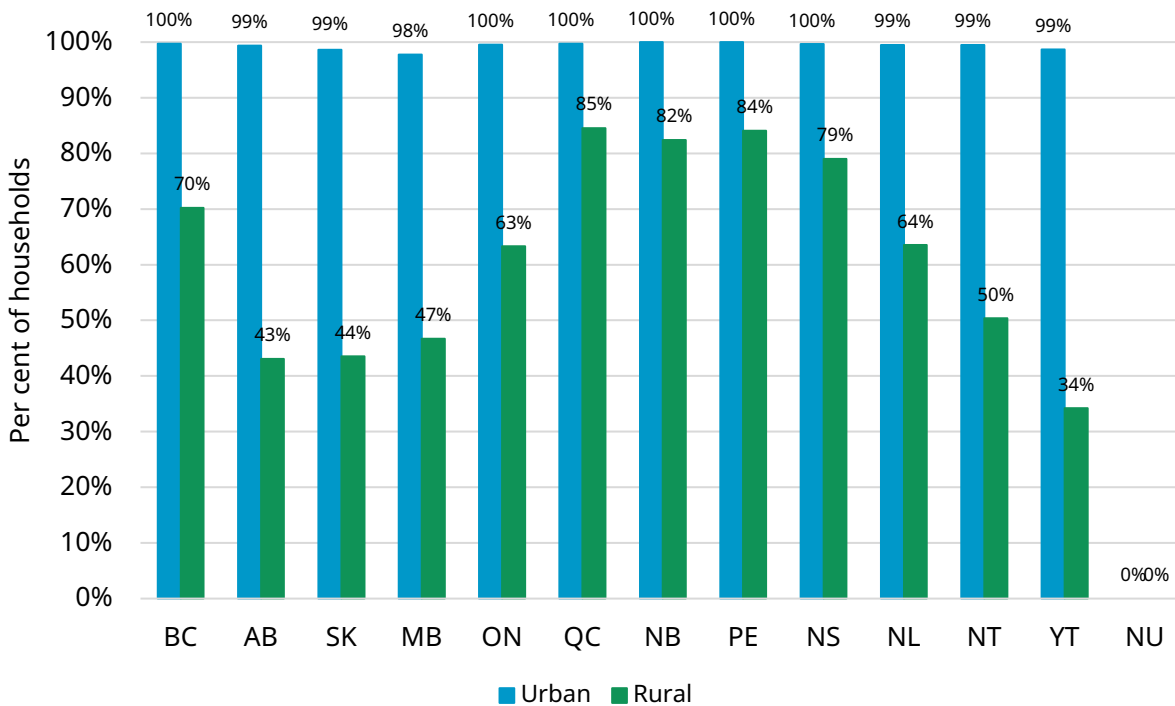
The CRTC defines a rural area as having a population of less than 1,000 or a density of 400 or fewer people per square km. This definition of rural will also include any households on First Nation reserves in a rural area.

Comparison of access to broadband speeds of 50/10 Mbps for urban and rural households

While access to high-speed internet in urban areas is nearly at 100 per cent (99.69 per cent in B.C.), some rural and remote communities across the country remain under-served. According to the CRTC, 70.2 per cent of rural households in B.C. had access to 50/10 Mbps in 2022, and B.C. tracks above the Canadian rate of 68.1 per cent of rural homes with 50/10 Mbps internet access. B.C. is fifth in the country by province

for rural connectivity (behind Quebec, Prince Edward Island, New Brunswick and Nova Scotia). Government funding programs support the expansion of high-speed internet services into rural and remote areas which may lack the density to support a service provider business case. Rural connectivity is expanding over time and progress will show in future reports as these funded projects complete.

Households with access to 50/10 Mbps - urban and rural



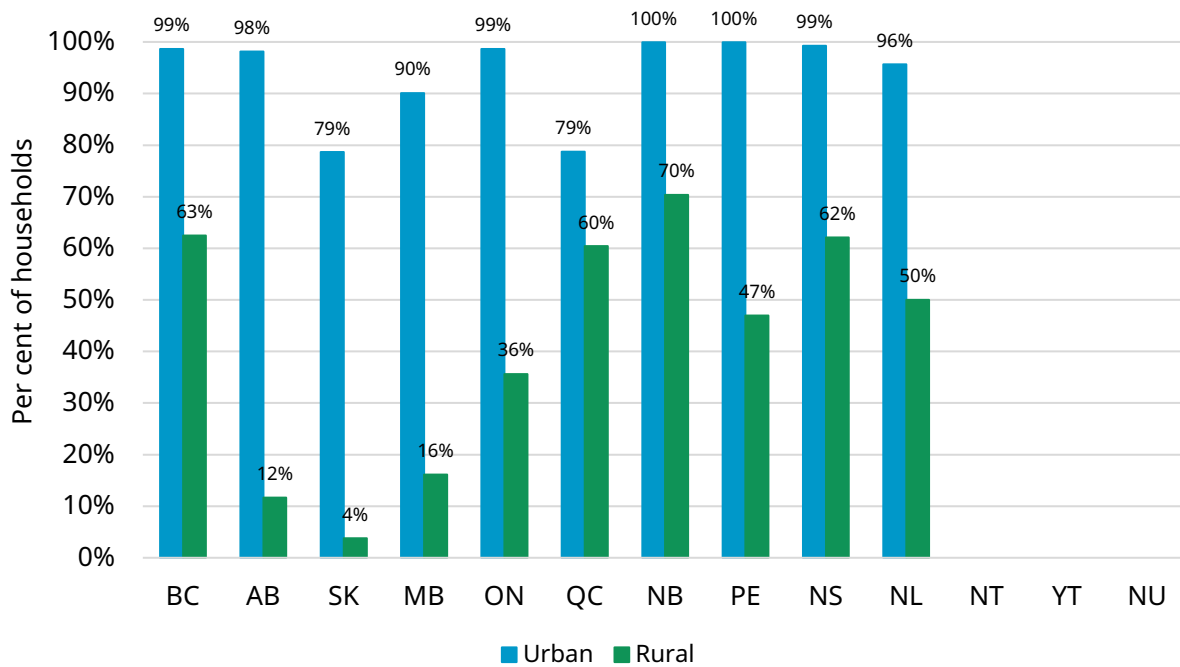
Source: CRTC Communications Market Report 2024

Comparison of access to broadband speeds of 1 Gbps for urban and rural households

Most households in urban areas in B.C. (98.65 per cent) have access to 1 Gbps internet speeds, compared to 62.5 per cent of households in rural areas with access to these higher speeds. B.C. is one of the leading provinces in Canada for gigabit connectivity in rural areas (second only to

New Brunswick at 70.35 per cent), illustrating that issues of access to higher speeds in rural areas are present in many provinces across the country. As infrastructure expands across the province, access to these higher speeds will increase.

Households with access to speeds 1 Gbps or greater - urban and rural



Source: CRTC Communications Market Report 2024

A commitment to support high-speed internet access on First Nation reserves

Connecting all First Nation communities with high-speed internet services by 2027 is a foundational component of the B.C. government's commitment to support reconciliation. This commitment aligns with the [United Nations Declaration on the Rights of Indigenous Peoples \(UNDRIP\)](#) and B.C.'s corresponding legislation, the [Declaration on the Rights of Indigenous Peoples Act \(Declaration Act\)](#). Connectivity is represented directly in action 4.36 in the [Declaration Act Action Plan](#), "to ensure every First Nations community in B.C. has high-speed internet services." Connectivity also indirectly supports many other actions in the Plan, including Indigenous language revitalization, education and training, healthcare and economic development.

The Province takes a [distinctions-based approach](#) and works government-to-government with Nations and Indigenous partner organizations to expand connectivity, recognizing each Nation is different and has sovereignty over their land. At time of report publication, there are approximately 3,300 homes in First Nation communities in B.C. (including reserve and Modern Treaty Nation lands) without high-speed internet services or a project in progress. Future applications to government funding programs will ensure every home is able to receive high-speed internet services by 2027. This will take a mix of technologies including fibre, coaxial cable, fixed wireless and satellite. This connectivity progress will be shown in future Connectivity in B.C. reports as well as [Declaration Act Annual Reports](#), which report on progress related to the Declaration Act Action Plan.



First Nation artist: Alano Edzerza

Alano Edzerza is a multimedia artist from Tahltan territory, now based in Vancouver.

Alano granted permission for use of his work, *Synergy* (2021), which focuses on the importance of connection and community.

Connectivity is foundational for First Nation communities to be able to thrive, and for meaningful reconciliation to be achieved through digital equity.

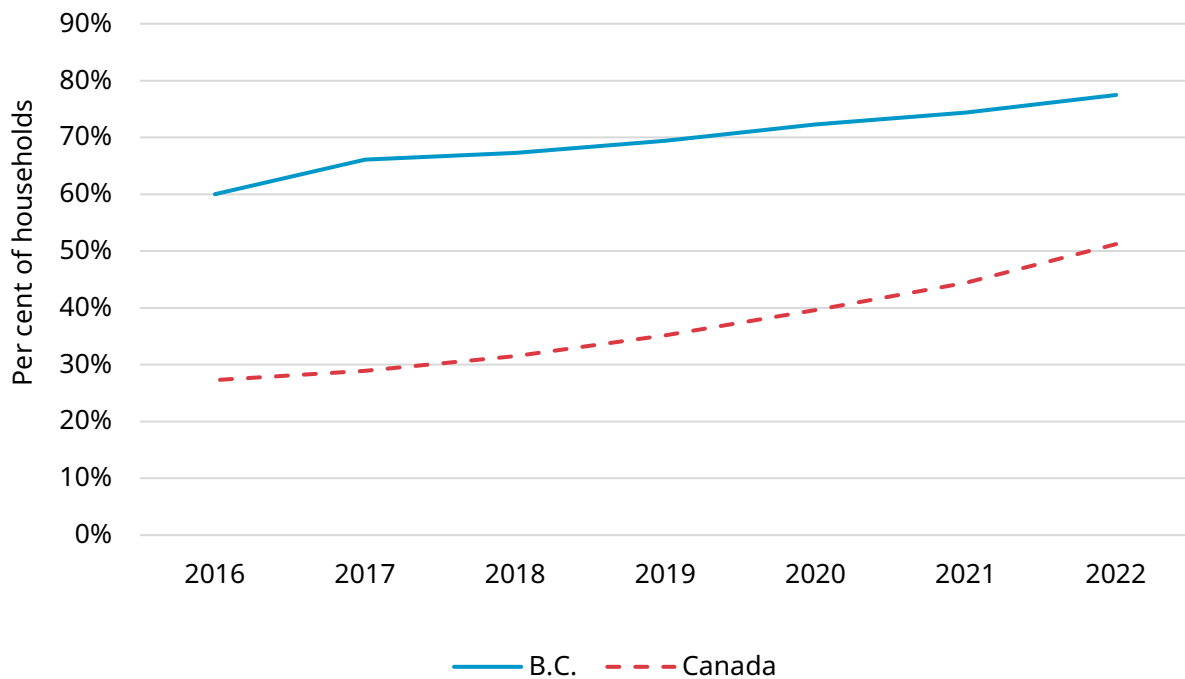
Alano's work can be found at edzerzagallery.com

Access to broadband speeds of 50/10 Mbps on First Nation reserves

Access to high-speed internet services is increasing for households on First Nation reserves. From 2016 - 2022, B.C. and Canada have shown a steady increase in access to 50/10 Mbps internet speeds on First Nation reserves.

Access in B.C. tracks above the national rate of access in Canada. 77.45 per cent of households on reserves in B.C. have access to high-speed internet services in 2022.

Households on First Nation reserves with access to 50/10 Mbps



Source: CRTC Communications Market Report 2024

Connectivity data for First Nation households in B.C.

There are over 200 First Nations in B.C*, including [Modern Treaty Nations](#).

First Nations connectivity information provided by the CRTC Communications Market Report is based on total population and dwellings on reserves according to Statistics Canada census data. It includes First Nation reserves and historic Treaty Nations and does not include Modern Treaty Nation lands.

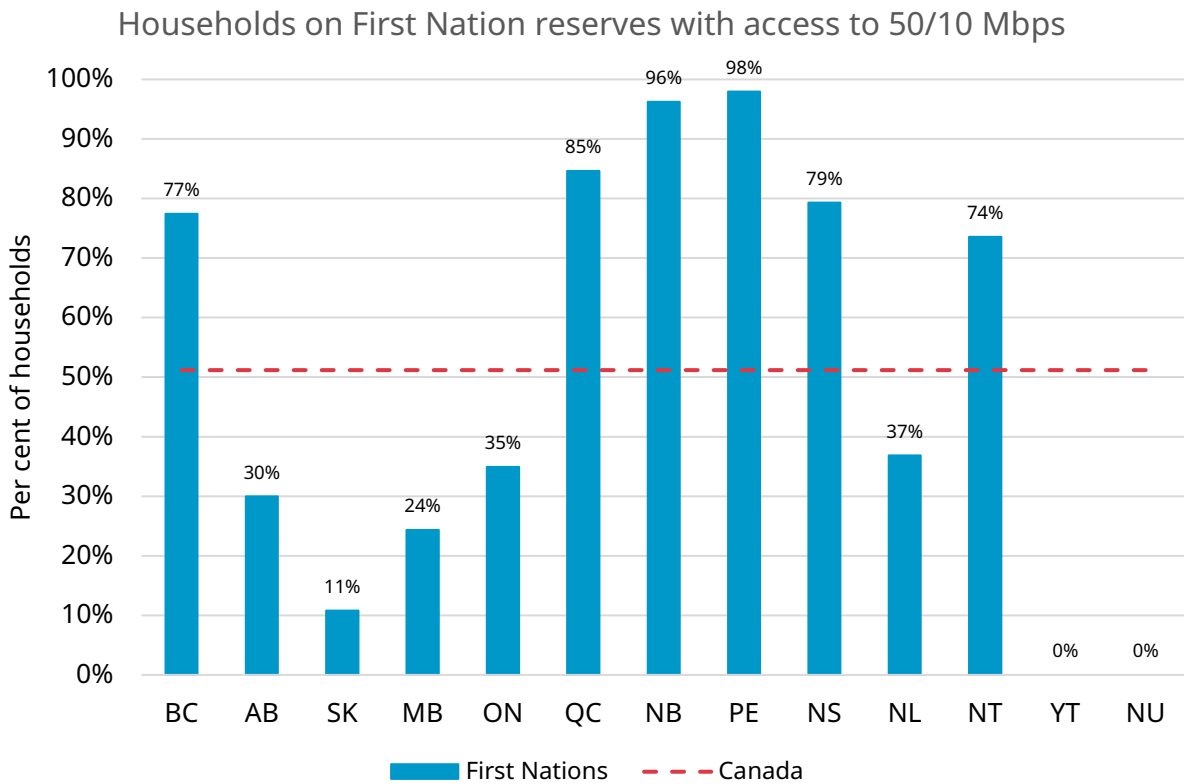
Data is included here to give a general overview of connectivity and may not reflect the current status.

*Source: [British Columbia Assembly of First Nations](#).

Access to broadband speeds of 50/10 Mbps on First Nation reserves by province

A lack of access to high-speed internet services for households on some First Nation reserves exists throughout Canada, however less so on Prince Edward Island and in New Brunswick, which are served at 97.99 and 96.25 per cent respectively.

B.C. ranks above the Canadian national rate for high-speed internet on First Nation reserves, with an estimated 77.45 per cent of households on reserves in the province having access to 50/10 Mbps internet speeds.



Source: CRTC Communications Market Report 2024

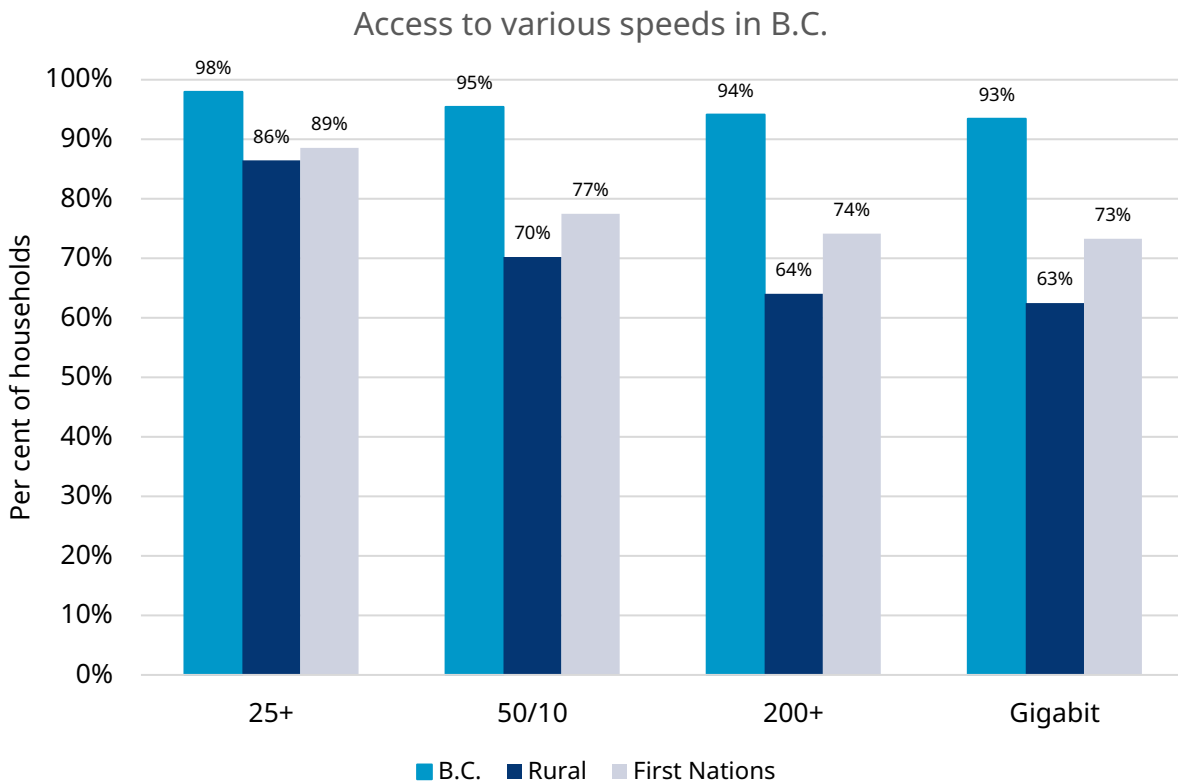
Access to broadband (50/10 Mbps, 200 Mbps and 1 Gbps) on First Nation reserves compared to B.C. and rural

First Nation households in B.C. on average have slightly more access to higher speed internet services than those in rural areas. 77.45 per cent of households on First Nation reserves have access to 50/10 Mbps, while 70.2 per cent of rural British Columbian households have access to these speeds.

In addition, there is slightly more access to higher speeds on reserve, with 73.29 per cent of households on First Nation reserves with access to 1 Gbps speeds compared to the rural average of 62.5 per cent.

Some rural First Nation households on reserve do not experience the same amount of access to high-speed internet services as urban First Nation households or other urban communities. As First Nation reserves in rural areas begin to have more infrastructure in place for broadband connection, internet services at 50/10 Mbps or higher will become more available.

Note: rural homes also include homes on First Nation reserves in rural areas.



Source: CRTC Communications Market Report 2024



Low Earth Orbit satellites

Low Earth Orbit (LEO) satellite internet services have the capability to reach parts of the province unserved by traditional terrestrial technologies. While Geosynchronous Earth Orbit (GEO) satellite internet services have been available for some time, their adoption has been limited due to performance issues in comparison to other internet services. LEO satellites, which orbit much closer to the earth, can provide high-speed internet service performance similar to those available in urban areas.

LEO technology faces some limitations in comparison to terrestrial fibre-to-the-home (FTTH) or hybrid fibre-coaxial (HFC) networks. Individual LEO satellites have finite capacity, so only a certain density of homes within a geographical area can be served by a satellite - this number varies by LEO internet service provider. LEO internet services also require line-of-sight from the antenna on the home to one or more LEO satellites, which may be challenging for homes surrounded by tall trees, mountains or other tall obstructions. In addition, LEO internet services can suffer service degradation, or service outages, due to extreme weather such as heavy rain or snow - this also varies by provider. For these reasons, FTTH and HFC services are generally seen as more desirable where feasible, but for remote households that are out of reach for cost-effective terrestrial services, LEO satellite options are a good alternative to achieve high-speed internet access.

Currently, both Starlink and OneWeb operate satellite constellations providing LEO internet services within B.C. As both providers offer full B.C. coverage they are now in the process of adding incremental capacity by increasing the number of satellites within their LEO constellation. Increased satellite counts enable providers to support both higher density of homes within an area and faster speeds.

Starlink offers LEO business services and at time of publication is the only provider of LEO-to-the-home consumer internet service in B.C. OneWeb, via their resellers, offers both LEO business services and a LEO-to-the-community service which a local service provider could use as a backbone service to provide bandwidth for last mile services. In addition, Telesat, a longstanding provider of satellite services in Canada, has announced they will provide a LEO service offering in the future and Amazon has also announced Project Kuiper that will provide a future LEO service.

LEO services are evolving rapidly. Provider's websites have the most current source of information regarding services, coverage and pricing.

- [Amazon | Project Kuiper](#)
- [OneWeb](#)
- [Starlink](#)
- [Telesat | Global Satellite Operators](#)





Part of the fibre build for the Columbia Basin Broadband Corporation's Jaffray to Roosville transport fibre project. This project brings 60 km of fibre capacity to the area. Photo credit: Columbia Basin Trust

Broadband affordability

Providing access to internet services is an important first step in getting connectivity to a home or business, but affordability is a key factor in digital inclusion and can determine whether someone is able to subscribe to the service with the speed required to benefit from a reliable high-speed internet connection.

Lack of access to services or devices can disproportionately affect the most vulnerable populations, including low-income families and seniors. This is particularly important in rural and remote areas, where in-person services can be far away and connectivity can be vital for access to services, jobs, economic opportunities and connection with loved ones.

Affordability highlights

- Lowest average subscription price in B.C. for a 50/10 Mbps internet plan tracks slightly lower than the Canadian average.
- B.C. has the third lowest average cost (after Quebec and Ontario) of an internet subscription plan within Canada for an urban area at \$68/month for 50/10 Mbps.
- Lower subscription prices are available in urban areas. British Columbians in rural areas on average pay more for their internet packages. This may be due to smaller providers who are unable to offer lower cost subscription options.
- The number of households with a broadband subscription has increased across Canada between 2019 and 2022. This may be due to increased access and/or increased availability of lower cost plans.

Affordability programs for internet services

As internet services expand rapidly in the developed world and become vital to accessing services and economic opportunities, academic researchers, analysts and governments are looking at other factors that might be a barrier to people experiencing the full benefits of digital technologies.

Barriers include the affordability of services and devices, as well as training, cultural factors and online safety. These barriers may disproportionately affect more vulnerable sectors of the population, such as those with low income, persons with disabilities, seniors, minority groups and others.

There is a variety of current programs to help with affordability and access to digital technologies:

The Government of Canada expanded the [Connecting Families Initiative](#), a program supported by service providers that aims to connect low-income seniors and families to affordable high-speed home internet. Service providers across the country offer 200 Gb of data usage for \$20 a month with no equipment or installation fees. For a list of providers see the [Government of Canada's website](#).

Some larger service providers also provide their own lower cost programs:

- Rogers Communications provides the [Connected for Success](#) program to offer affordable mobile, TV and internet services to eligible applicants.
- TELUS provides the [Connecting for Good](#) program which offers subsidized internet and cellular services to low-income families, seniors and others.

See each provider's web pages for eligibility terms and how to apply.

Consumer Price Index

The Consumer Price Index in February 2024 stated prices for internet access services in Canada fell 13.2 per cent on a year-over-year basis in February, stemming from a monthly decline of 9.4 per cent. They cite the monthly price decline was attributable to specials offered by internet service providers and includes all available plan options.

Consumers who signed on to a cell phone plan in February paid 26.5 per cent less year over year, following a 16.4 per cent decline in January. The year-over-year decline was driven by lower prices for new plans and increases in data allowances for some cellular service plans. These price reductions may not be available in all areas of Canada.

Source: [Consumer Price Index](#)

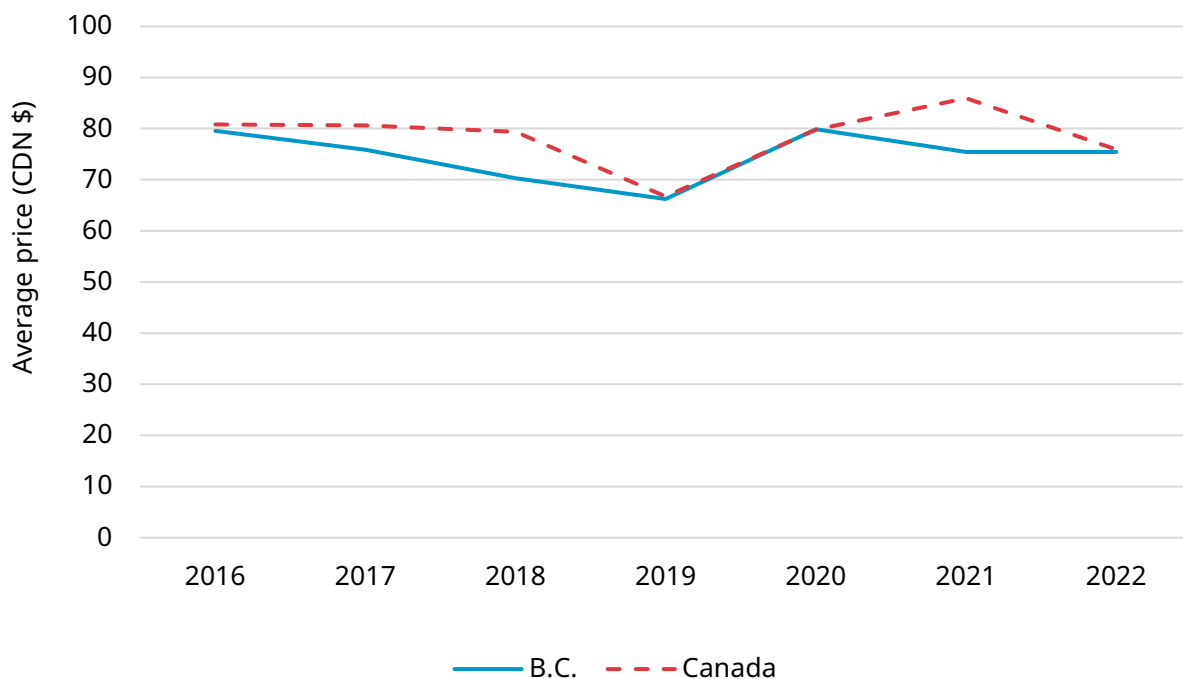


Lowest average price for unlimited 50/10 Mbps plans

B.C. trends slightly below the Canadian lowest average price of \$75.89 for a monthly 50/10 Mbps unlimited internet plan, offering subscriptions at \$74.90 per month (including rural and urban plan prices).

Over time, B.C. has remained either on par or lower than the Canadian average for internet subscription prices for a monthly 50/10 Mbps unlimited plan. Note: Lowest average prices are only available for 50/10 Mbps unlimited plans with no data caps.

Lowest average price of 50/10 Mbps unlimited



Source: CRTC Communications Market Report 2024

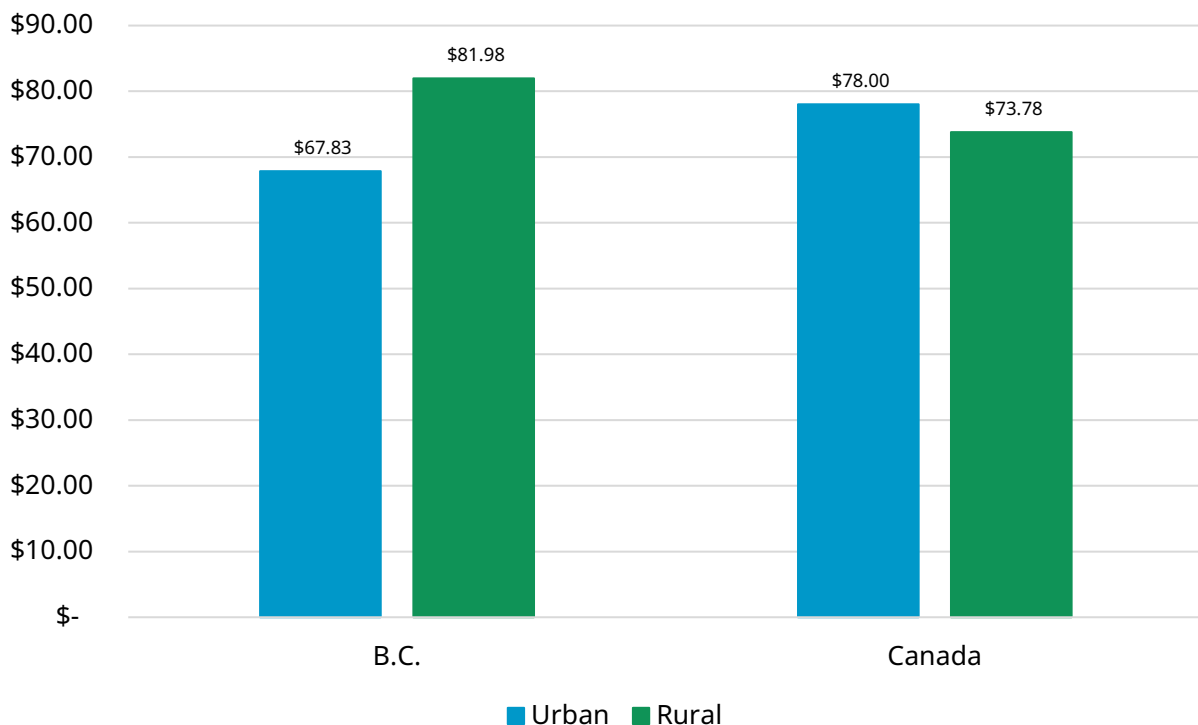


Lowest average price for unlimited 50/10 Mbps plans – rural versus urban

B.C. has one of the lowest average subscription rates at \$68 per month in Canada in urban centres, following Quebec at \$64 and Ontario at \$67. This shows that minimum subscription prices are available in urban centres, however these rates may only be offered in limited areas. Rural subscribers in B.C. tend to pay more than their urban counterparts for a monthly 50/10 Mbps unlimited internet subscription.

B.C. shows a difference of \$14.15 per month between urban and rural lowest average price for high-speed internet services of 50/10 Mbps unlimited plans. Compared to the Canadian lowest average, B.C. rural communities can pay around \$8.00 more for 50/10 Mbps unlimited plans than rural areas in other provinces in Canada.

Lowest average price of 50/10 Mbps unlimited - urban and rural



Source: CRTC Communications Market Report 2024

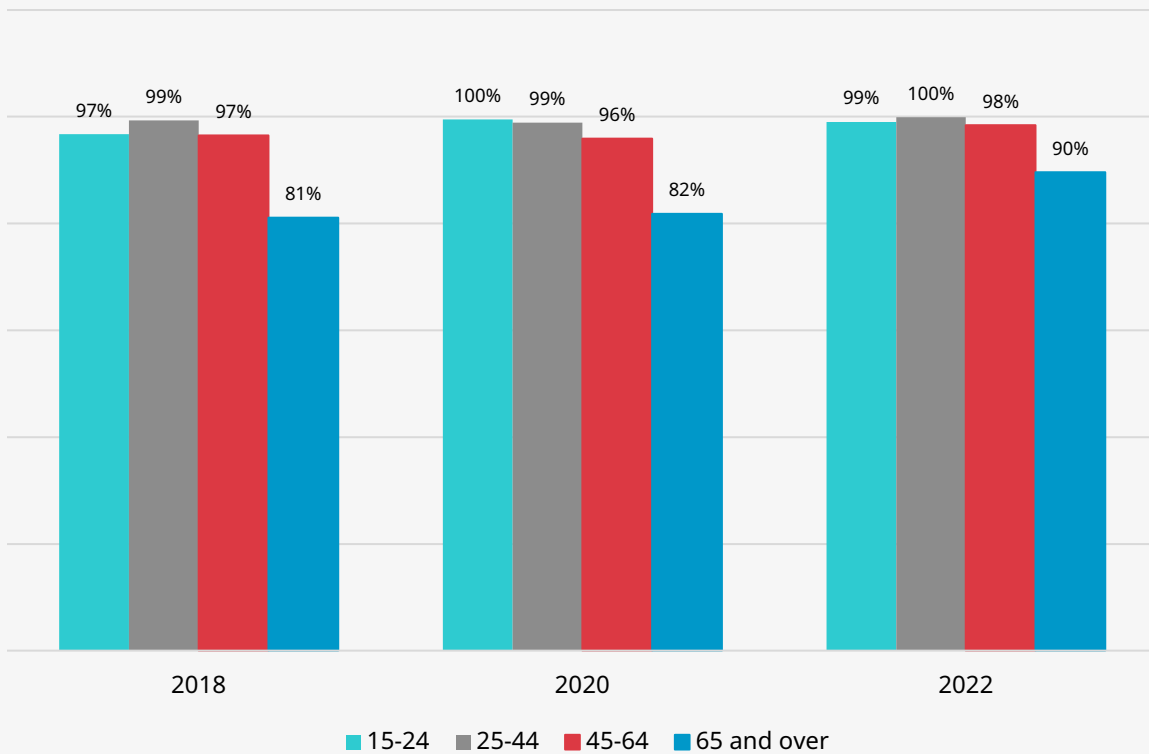


Internet use in British Columbia

Internet use across Canada can be analyzed over time thanks to the federal Canadian Internet Use Survey.

The 2022 survey shows that in British Columbia the use of internet is prevalent in all age categories, with 25- to 44-year-olds using the internet the most, and those 65 years and older using the internet the least. Overall internet use is increasing in British Columbia as more and more services, both in the private and public sector, are online and access to high-speed internet services is becoming more available and essential for modern life. The survey also found Canadians spend a lot of time online. One-quarter of Canadians spent 30 hours or more per week using the internet, down only slightly from the beginning of the COVID-19 pandemic in 2020.

Per cent of use of internet by age category



Source: 2022 Canadian Internet Use Survey

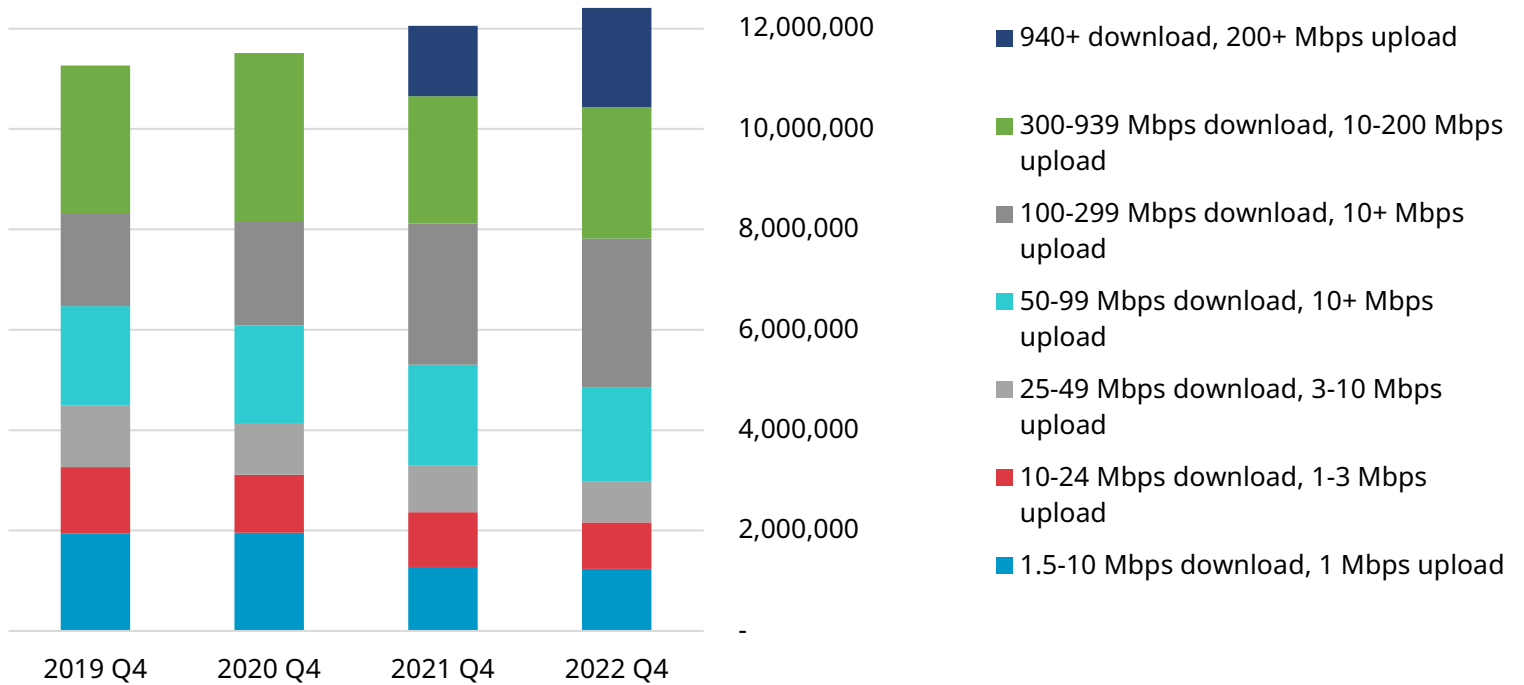


Subscription rates in Canada

The number of subscribers to internet services has steadily increased since 2019 for Canada, with more subscribers taking advantage of higher speeds as they become available.



National subscription numbers



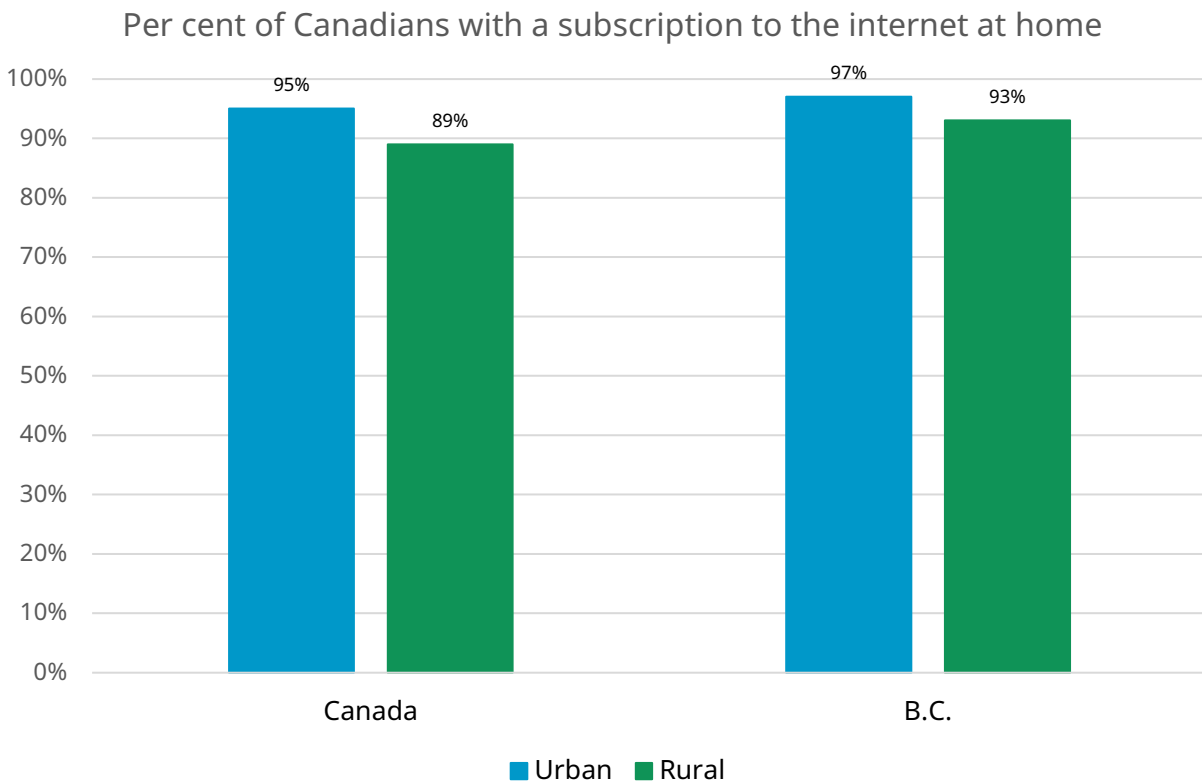
Sources: CRTC Communications Market Report 2024



Internet subscriptions to the home in B.C.

While the CRTC does not release subscription data by province, the Canadian Internet Use Survey asks Canadians a variety of questions, including whether there is access to the internet at home. According to this survey, B.C. ranks above the Canadian average

both for rural and urban households, with 97 per cent of urban dwellers in B.C. with internet services in the home, compared to 93 per cent of those surveyed in rural areas.



Source: 2022 Canadian Internet Use Survey





Contractors for the Connected Coast project build one of the landing sites that connects to the subsea fibre that brings increased internet capacity to communities along the coast.
Photo credit: Connected Coast

Broadband speeds

Internet speed remains a key factor in use and performance as technology advances and demands for streaming and access to services increase.

This section highlights internet speeds experienced in the home or business in B.C. It contrasts with the previous section which reports on access of internet services offered by provider.

Speeds experienced by individual users in a home or business can differ from the speeds available for subscription reported in the previous section. These differences can include the speeds subscribed to by the consumer (as there may be higher speed packages available), the number of people accessing the internet in the home at the same time, the type and age of customer-owned devices used, whether the connection is Wi-Fi or a wired connection to a router is used, and many more.

Access and speed data analyzed together show a rising trend in internet speeds available and experienced in B.C.

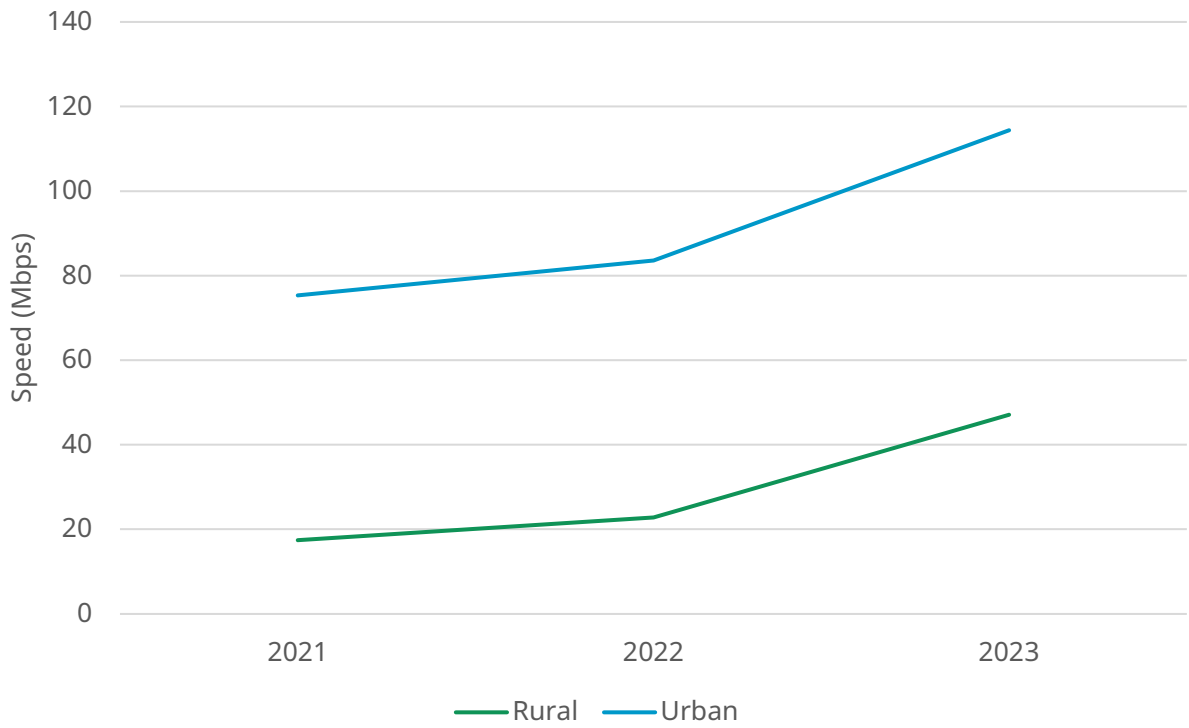
Median download and upload speeds experienced in urban and rural areas

According to data from CIRA, both upload and download speeds experienced in the home or business in B.C. have increased from 2021-2023, as technology improves and higher speeds become available for subscription.

B.C. has above Canadian average median upload and download speeds experienced in the home for rural and urban areas. Rural Canadian average for median download and upload are 36.49 and 5.02 Mbps respectively compared to B.C. at 47.07 and 8.88 Mbps. However, comparison of urban speeds to rural speeds shows that some rural areas in B.C. experience slower speeds. This could be a result of various factors, including availability of higher speed packages.

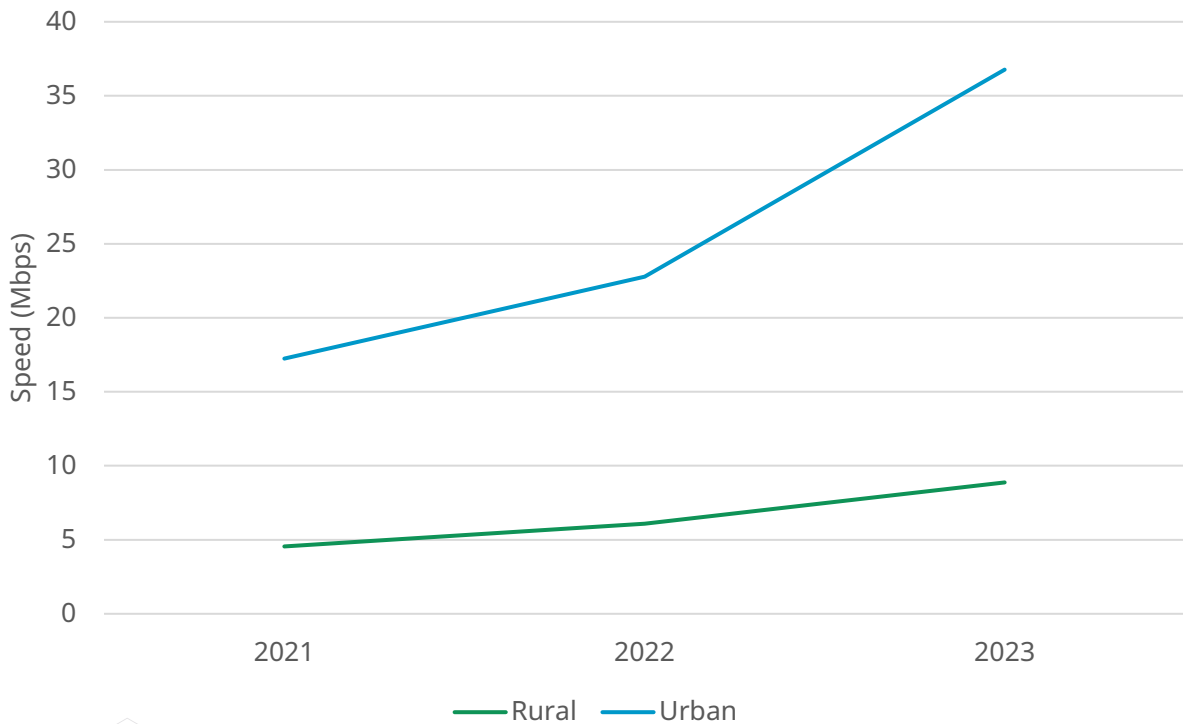
Multiple speed testing services are available to check your internet speed at home, relative to your service provider subscription package. CIRA offers a free online [internet performance speed test](#). For tips on improving internet performance see the [Province's Connectivity in B.C. web pages](#).

B.C. median download speeds for rural and urban communities



Source: CIRA 2023 Q3

B.C. median upload speeds for rural and urban communities



Source: CIRA 2023 Q3



Maintenance of a cellular tower.
Photo credit: TELUS Communications Inc.

CELLULAR

Cellular is increasingly important as our world becomes more mobile, allowing us to work, connect and play while on the move. Mobile services are important for safety, public alerting and being able to call for help when needed, as well as for access to services

As 5G continues to be deployed across Canada, consumers will have access to faster data rates, increased bandwidth, and lower latency, among other benefits.

Cellular highlights

- B.C. is a leader in Canada in deployment of 5G services by per cent of population.
- B.C. leads other provinces with access to 5G by population on First Nation reserves and in rural areas.
- LTE mobile coverage is high across Canada, including B.C., with 99.12 per cent of the population in the province with access to an LTE service.
- Cellular coverage on primary and secondary highways is lower in B.C. compared to other provinces, due in part to challenging terrain, lack of available power and the remoteness of some B.C. highways.
- Prices for cellular plans with 5GB of data have seen a steady decline in Canada, from \$84 a month in 2016 to \$43 a month in 2021. In 2022, B.C. saw a slight increase in average price to \$48 a month, which mirrors many of the other provinces in Canada.
- B.C. remains on par with the Canadian average cost for LTE and 5G cellular plan prices.

Cellular definitions

- **Latency:** The measurement of time between your request for data to a server (i.e. when you click something on a website) and the return of that data.
- **LTE:** Long-Term Evolution is referred to as fourth generation cellular and is the current standard, widely deployed in most mobile networks.
- **LTE-A:** Long Term Evolution – Advances is an enhancement of the LTE standard.
- **5G:** 5G New Radio is a new radio access technology that is referred to as the fifth generation. These networks promise to deliver significantly faster speeds, lower latency, and gains in spectral efficiency than prior generational networks, among other benefits.

Source: [CRTC](#)

Cellular access

Mobile access to a cellular network is important and enables us to stay in touch with friends and family, as well as call for help if we need it while on the move.

The CRTC's universal service objective states that the latest generally deployed mobile wireless technology should be available, not only in Canadian homes and businesses, but on as many major highways as possible throughout Canada.

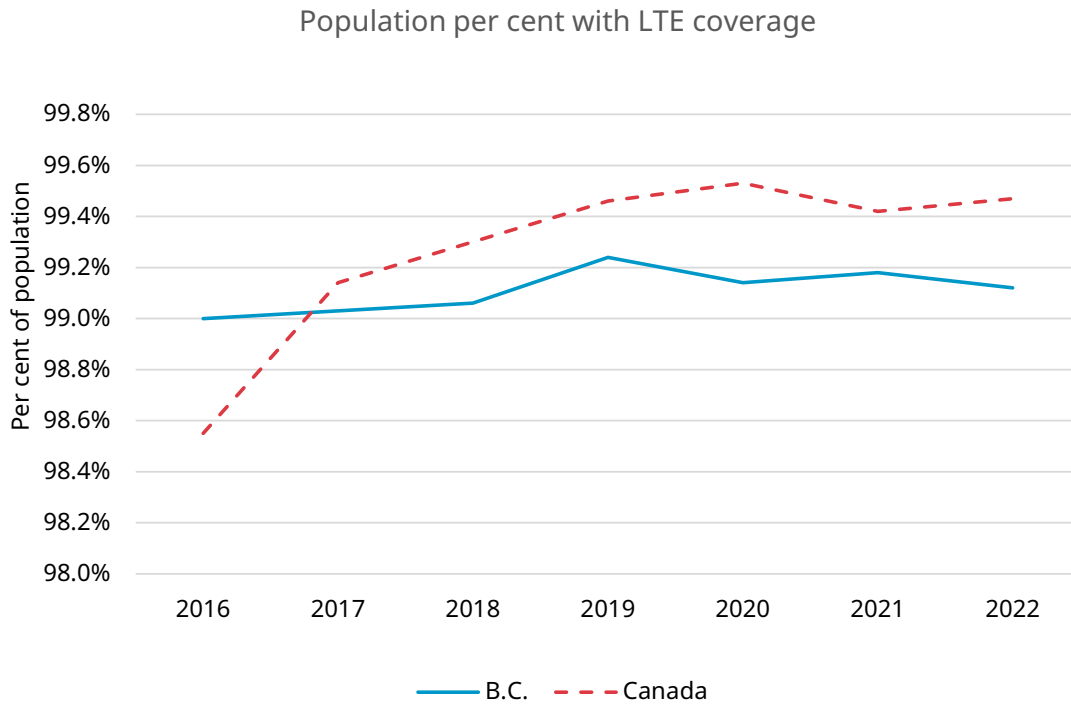
The expansion of broadband transport services supports the expansion of cellular services across the province as the same network infrastructure can be used for both services.

The Province allocated a further \$75 million in 2023 to expand cellular services along highways. This funding is administered through Northern Development Initiative Trust's [Cellular Expansion Fund](#).

LTE coverage for B.C. and Canada

LTE mobile coverage is high across Canada and B.C. in terms of percentage of the population with access to services. B.C. has 99.12 per cent of the population with access to LTE services.

Note: LTE coverage does not represent total cellular coverage in B.C., as LTE, LTE-A and 5G services cover some different areas in the province. Total cellular service coverage in B.C. is higher.



Source: CRTC Communications Market Report 2024

Cellular coverage in B.C.

This section charts access to LTE, LTE-A and 5G cellular services by per cent of population in British Columbia as documented by the CRTC. These services overlap in some areas of the province and increase total coverage by population in other areas. Analysis by the Connectivity Division shows an estimated 99.77 per cent of people in B.C. with access to a cellular service in 2022.

Source: Connectivity Division, Ministry of Citizens' Services.

Spectrum licences and allocation

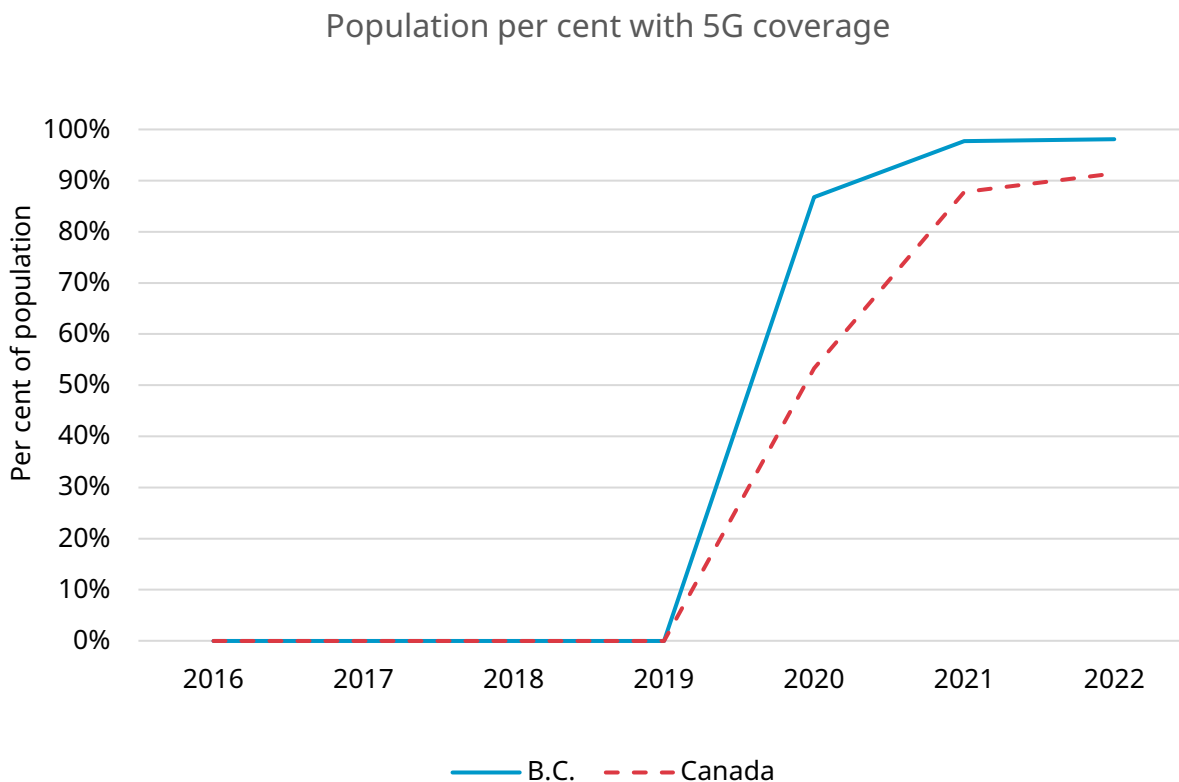
Spectrum refers to the invisible radio frequencies that wireless signals travel over. Portions of electromagnetic spectrum are divided into separate “bands” depending on their wavelengths. Spectrum bands are further divided into “blocks” of radio frequencies that are licensed to service providers and other sectors for communication over the airwaves.

The federal government regulates licences to produce spectrum for telecommunications purposes through Industry, Science, and Economic Development Canada. The Canadian government holds auctions to allocate wireless spectrum licences for commercial use. A spectrum licence is required to operate a cellular service in an area, such as a new 5G service for example.

For more information see the [Government of Canada website](#).

5G coverage for B.C. and Canada

B.C. leads other provinces and trends above the Canadian national rate for access to 5G cellular services, with 98.09 per cent of the population in B.C. able to access a 5G service. Coverage has increased considerably in B.C. from 86.79 per cent in 2020 and is set to increase further as the technology is deployed more broadly across Canada and 5G becomes the new standard.

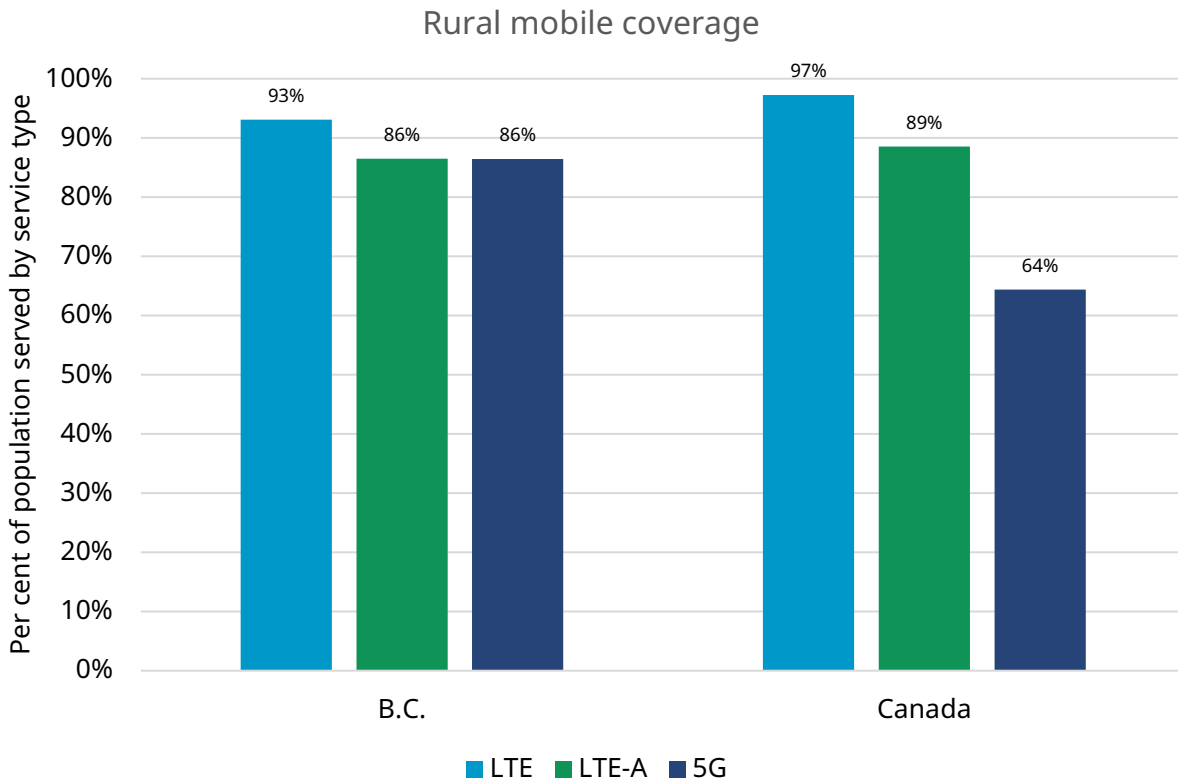


Source: CRTC Communications Market Report 2024

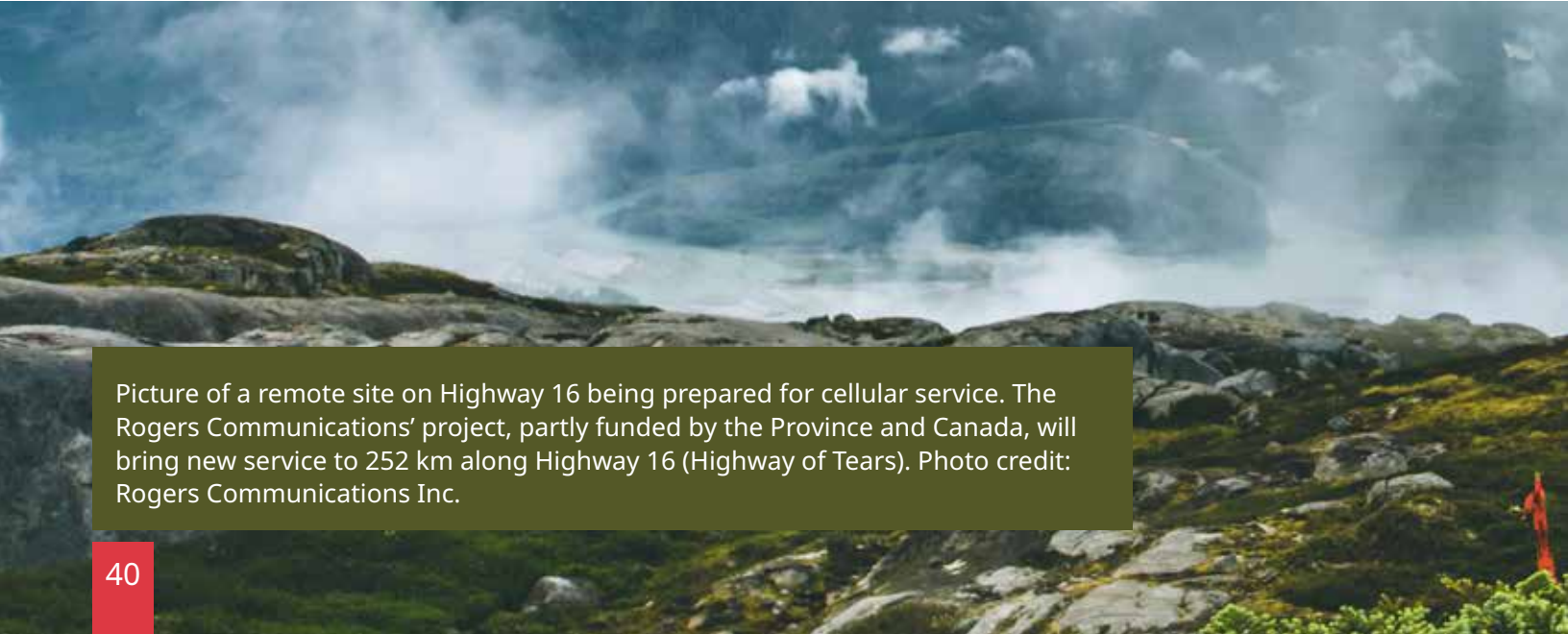
Rural cellular coverage

For LTE and LTE-A population coverage within rural areas, B.C. is slightly below the Canadian national access rate at 93.09 and 86.49 per cent respectively. For 5G, B.C. is above the Canadian access rate for population in rural areas and leads other provinces with 86.46 per cent covered. In rural B.C., 5G coverage has

increased considerably from 52.15 per cent in 2020 to 86.46 per cent in 2022. LTE and LTE-A coverage has stayed on par with 2020 coverage. Note different coverages of LTE, LTE-A and 5G are reported separately by the CRTC, but coverage areas overlap. Total cellular coverage in rural areas may be higher.



Source: CRTC Communications Market Report 2024



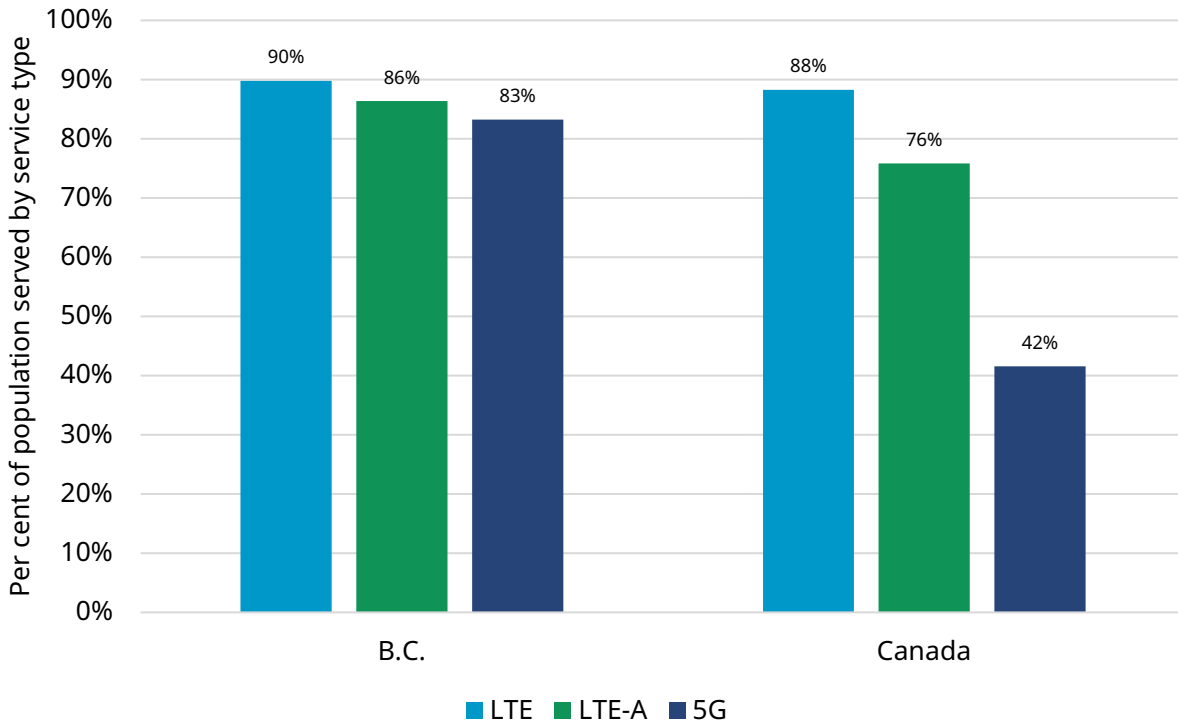
Picture of a remote site on Highway 16 being prepared for cellular service. The Rogers Communications' project, partly funded by the Province and Canada, will bring new service to 252 km along Highway 16 (Highway of Tears). Photo credit: Rogers Communications Inc.

Cellular coverage on First Nation reserves

First Nation reserves in B.C. on average are less served with LTE than rural or urban areas, with 89.81 per cent of the population on reserves with access to LTE coverage. B.C. has the most 5G coverage for First Nation reserve areas compared to other provinces in Canada, with 83.25 per cent of the population on First Nation

reserves in B.C. with access to 5G services. First Nation reserves 5G, LTE and LTE-A coverage has increased since 2020. 5G access has increased considerably on reserves in recent years, from 59.54 per cent in 2020 to 83.25 per cent in 2022.

First Nation reserves mobile coverage



Source: CRTC Communications Market Report 2024



Cellular coverage along primary and secondary highways

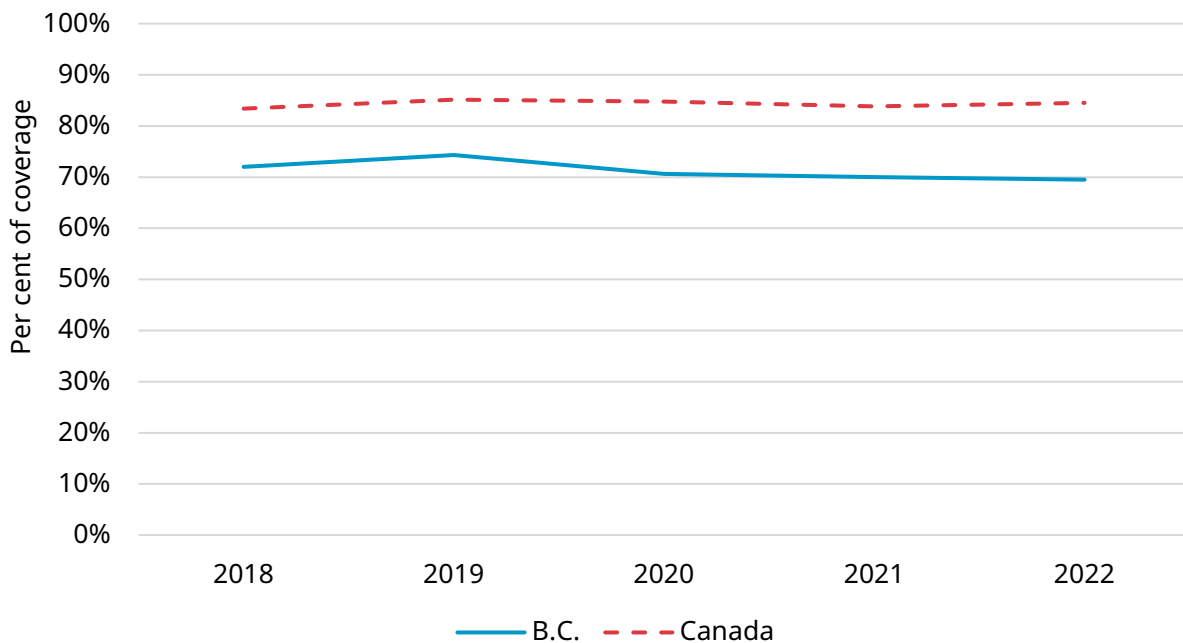
B.C. is behind the Canadian average for cellular coverage along sections of primary and secondary highways. This is due in part to challenging terrain, lack of available power and the remoteness of highways without populations supporting a business case to expand cellular services.

Of the 15,000 kilometres of primary and secondary highways in the province, approximately 4,800 kilometres of highway lack cellular service coverage. Of this total, 3,100 kilometres also lack available power

necessary for cell towers. This makes the construction of networks, especially in rural and remote areas, challenging.

Note: according to the CRTC, the slight decline in mobile coverage shown below can, in part, be attributed to telecom companies improving the accuracy of their coverage estimates, resulting in more accurate reporting of coverage. In addition, increased users on the network can cause a decline in coverage where networks reach capacity.

Mobile coverage along primary and secondary highways



Source: CRTC Communications Market Report 2024

Provincial funding and highway cellular in B.C.

For the first time in 2020 through the Connecting British Columbia funding program, \$15 million was allocated to cellular service expansion along B.C. highways and rest areas. This funding has been allocated to provide cellular coverage to 532 km of highway, in addition to connectivity provided at 30 highway rest areas, including ferry terminals and campgrounds. One example is the completion of a Rogers Communications' project that provides an additional 70 km of cellular service on Highway 14 between Sooke and Port Renfrew on Vancouver Island, making travel safer. The Province also partly funded five emergency call boxes on Highway 97. For a map of all announced provincially funded projects, see the [Connectivity in B.C. web pages](#).

In 2023, the B.C. government allocated a further \$75 million to expand cellular services along highways in B.C. This funding is being administered through Northern Development Initiative Trust's [Cellular Expansion Fund](#) and is expected to add an additional 550 km of highway cellular coverage in under-served areas, marking the total expansion of cellular service due to government funding at over 1,000 km in the province.

Source: Connectivity Division, Ministry of Citizens' Services.





Maintenance of a cellular tower at Wilderness Point on the Sunshine Coast of B.C.
Photo credit: TELUS Communications Inc

Cellular affordability

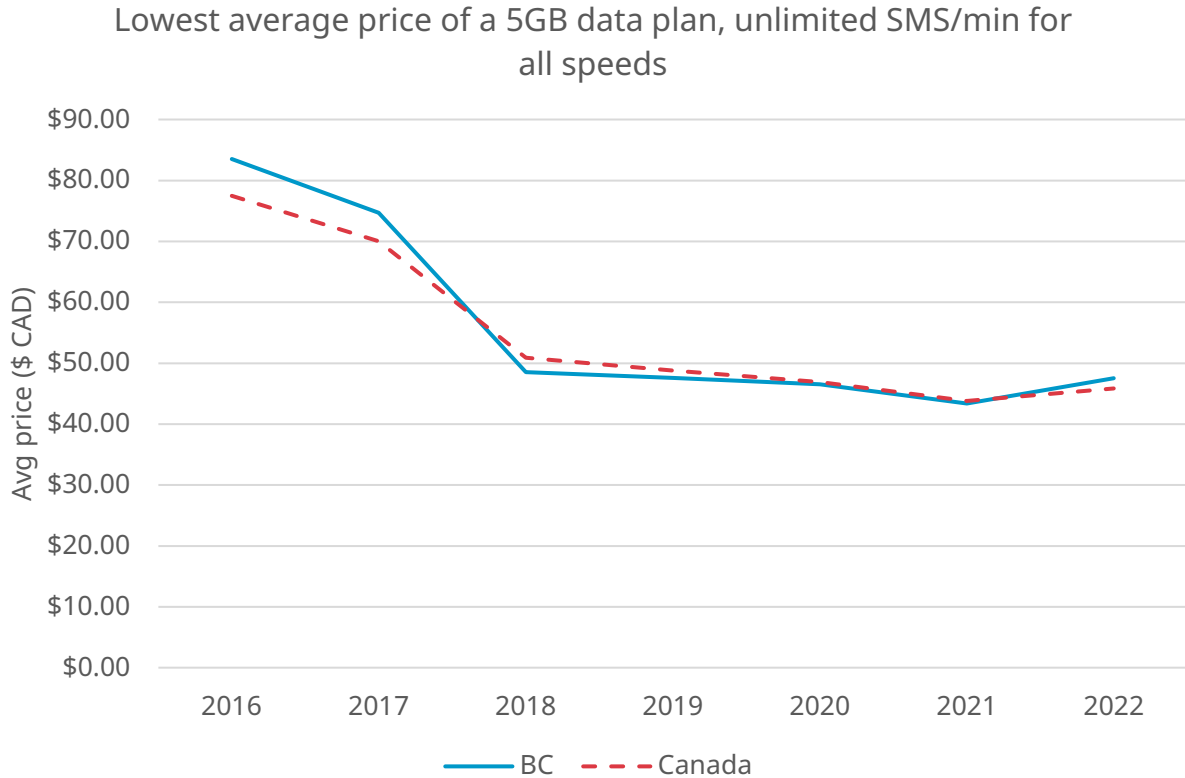
The CRTC states all Canadians need fast, affordable, and reliable broadband internet and mobile access to participate fully in today's economy and society. Recent [federal policy changes](#) are looking at ways to promote

competition in the cellphone services market so that Canadians can benefit from lower prices and more choice for telecommunications services.

Lowest average price (5GB data, unlimited SMS/min)

The lowest average price of a 5GB data plan has decreased across Canada from of \$77.47 a month in 2016 to \$43.81 in 2021, with a slight increase in price in 2022. In B.C., the lowest average price of a 5GB plan

has decreased from \$83.53 in 2016 to \$47.55 per month in 2022, with a lowest average of \$43.39 per month in 2021. B.C. is currently on par with the Canadian lowest average price.



Source: CRTC Communications Market Report 2024



National download and upload traffic per subscriber

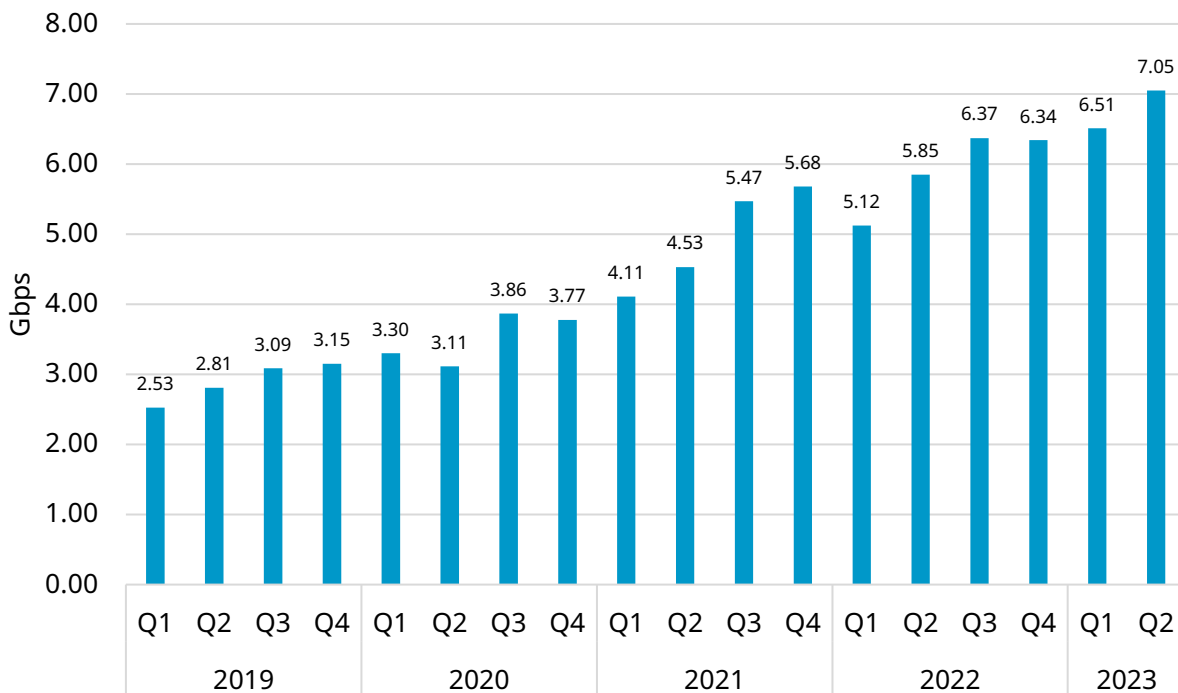
Since 2019, the average download and upload traffic per data subscriber per month in Canada has steadily increased from 2.53 GB per month in 2019 to 7.05 GB per month in 2023.

This shows usage of cellular data is increasing over time. According to the Canadian Internet Use Survey 2020, most Canadians (84%) have a smartphone for personal use, up four percentage points from 2018.

Almost two-thirds of Canadians (64%) use their smartphone at least once per hour, including to check messages, use social networks and news sites, and check notifications, while one-fifth (20%) use their smartphone a few times per day or less.

As the use of digital technologies increases, and data becomes more affordable, individuals are using mobile phones for a diverse array of uses and spending longer periods of time online.

National average download/upload traffic per data subscriber per month



Source: CRTC Communications Market Report 2024

Next Generation 911

Next Generation 911 (NG911) refers to the modernization of 911 networks and infrastructure across Canada. It is a federally-mandated transition of the emergency communications network from the current network to an Internet Protocol based technology.

NG911 will enable important improvements to public safety, including better 911 caller location information, real time texting, streaming audio and video and new ways to direct calls to services other than police, fire and ambulance, such as mental health support.

The Province is working with local governments to build stronger communities through upgrades to critical emergency communications services that will help keep people safe and improve emergency responses.

In 2023, the Province invested \$150 million to support upgrades to B.C.'s 911 emergency communications system, which is aging and increasingly incompatible with evolving technologies. The investment is divided into two parts:

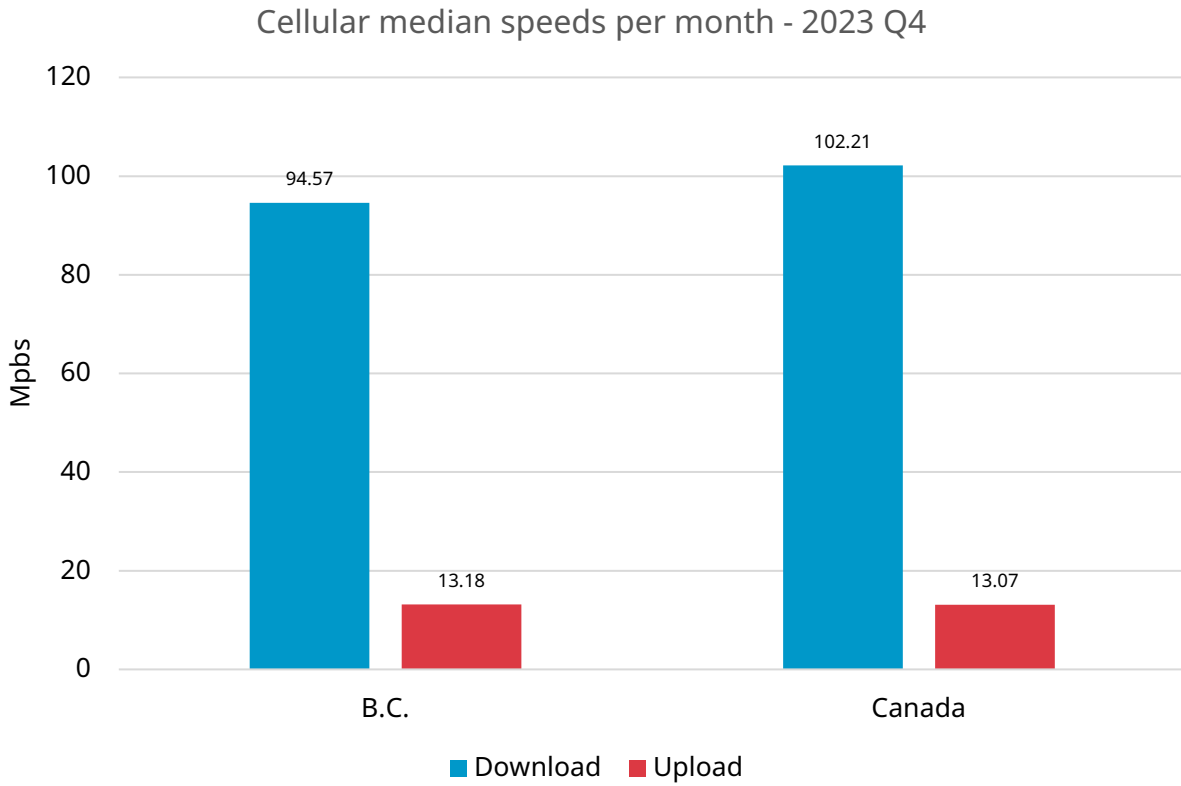
- \$90 million was provided to E-Comm 9-1-1 for technological upgrades; and
- \$60 million was provided to the Union of BC Municipalities to support local governments' preparedness for the implementation of NG911 and to provide funding to eligible recipients to support the transition and operational readiness of existing 911 services to NG911, in compliance with the CRTC Mandate.

NG911 will improve public safety. Its features will make the 911 system more accessible for people to communicate with emergency services, and for people with disabilities who will be able to use different text media to interact with operators.



Cellular speeds

The Canadian median speed for cellular services is 102.21 Mbps download and 13.07 Mbps upload per month. The average monthly speeds in B.C. are 94.57 Mbps download and 13.18 Mbps upload. Download and upload speeds have increased over time for both the Canadian and B.C. median speeds, and show that high speeds for mobile are available in coverage areas in the province and across Canada.



Source: Speedtest Data 2024





Ministry of
Citizens' Services

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Email: ConnectedCommunities@gov.bc.ca

Web: [Connectivity in B.C.](#)