



PEACE RIVER REGIONAL DISTRICT

Broadband Internet and Mobility Committee

July 17, 2024, 10:00 a.m.

1981 Alaska Avenue, Dawson Creek, BC

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BROADBAND INTERNET AND MOBILITY COMMITTEE

MEETING MINUTES

April 24, 2024, 10:00 a.m.

1981 Alaska Avenue, Dawson Creek, BC

Directors Present:	Chair Hiebert, Electoral Area D Vice Chair Quibell, District of Hudson's Hope (via Zoom) Director Dober, City of Dawson Creek Director Hansen, City of Fort St. John (via Zoom) Director Kealy, Electoral Area B Director Sperling, Electoral Area C Director Taillefer, District of Taylor (via Zoom) Director Veach, Pouce Coupe Director Zabinsky, City of Fort St. John
Directors Absent:	Director Courtoreille, District of Chetwynd Director Krakowka, District of Tumbler Ridge Director Rose, Electoral Area E
Staff Present:	Tyra Henderson, Corporate Officer Trevor Ouellette, IT Manager Terri Henrickson, Regional Connectivity Coordinator
Delegations:	Susan Stanford, Assistant Deputy Minister, Connectivity Division Rachel Greenspan, Executive Director Network BC Megan Chadwick, Director, Community Engagement Connected Communities BC, Connectivity Division (via Zoom) Jeanne Holliss, Executive Director, Connected Communities (via Zoom)

1. CALL TO ORDER

The Chair called the meeting to order at 10:00 a.m.

2. ADOPTION OF AGENDA

MOVED Director Dober

SECONDED Director Taillefer

That the Broadband Internet and Mobility Committee adopt the April 24, 2024, Meeting Agenda:

1. CALL TO ORDER

2. ADOPTION OF AGENDA

3. GALLERY COMMENTS OR QUESTIONS

(Cont'd on next page)



4. ADOPTION OF MINUTES

4.1 Broadband Internet and Mobility Committee Draft Meeting Minutes of January 26, 2024

5. BUSINESS ARISING FROM THE MINUTES

6. DELEGATIONS

7. CORRESPONDENCE

8. REPORTS

8.1 Contract Award – Planetworks Consulting (RFP 12-2024), ADM-BIMC-023

9. NEW BUSINESS

10. CONSENT

11. ITEMS OF INFORMATION

11.1 Telecom Decision CRTC 2024-69

11.2 Northeast Connectivity NDIT Funded Projects

11.3 Terms of Reference

11.4 Broadband Internet and Mobility Committee – Guiding Principles

11.5 Bylaw No.2487, 2022

12. RECESS TO CLOSED SESSION

12.1 Notice of Closed Broadband Internet and Mobility Committee Meeting – April 24, 2024, ADM-BIMC-022

13. ADJOURNMENT

CARRIED

3. GALLERY COMMENTS OR QUESTIONS

4. ADOPTION OF MINUTES

4.1 Broadband Internet and Mobility Committee Draft Meeting Minutes of January 26, 2024

MOVED Director Dober

SECONDED Director Zabinsky

That the Broadband Internet and Mobility Committee Meeting Minutes of January 26, 2024 be amended to reflect Director Veach's return to the meeting at 10:41 a.m. and be adopted as amended.

CARRIED

5. BUSINESS ARISING FROM THE MINUTES

VARY AGENDA

The Chair varied the agenda to move to Item 12 – Notice of Closed Broadband Internet and Mobility Committee Meeting – April 24, 2024.

12. RECESS TO CLOSED SESSION

12.1 Notice of Closed Broadband Internet and Mobility Committee Meeting – April 24, 2024, ADM-BIMC-022

MOVED Director Sperling

SECONDED Director Zabinsky

That the Broadband Internet and Mobility Committee recess to a Closed Meeting at 10:07 a.m. for the purpose of discussing the following items:

12.1 Notice of Closed Broadband Internet and Mobility Committee Meeting – April 24, 2024, ADM-BIMC-022 (Cont'd)

Agenda Item	Description	Authority
3.1	Minutes	CC Section 97(1)(b) Closed Minutes, Access to Records.
5.1	Delegation	CC Section 90(1)(j) Information Prohibited from Disclosure.

CARRIED

RECONVENED

The Chair reconvened the Open Broadband Internet and Mobility Committee meeting at 11:08 a.m. and returned to Agenda Item 6 – Delegations.

6. DELEGATIONS

6.1 Connected Communities and Networks BC Presentation

Susan Stanford, Assistant Deputy Minister, Connectivity Division and Rachel Greenspan, Executive Director Network BC presented in person, while Jeanne Hollis, Executive Director Connected Communities, and Megan Chadwick, Director Community Engagement Connected Communities BC, Connectivity Division attended via Zoom.

Connected Communities and Networks BC presented a Connectivity Update and topics included:

1. Short and long-term impacts of connectivity funding for rural regions of BC.
2. Economic return from connectivity investments - Northern region
3. Province-wide Impact
4. Funding & Project Landscape
5. Projects in progress
6. Intake 3 areas of focus
7. Highway cellular
8. LEO Constellations - expanding opportunities.
9. Emerging Issues

Connectivity is a priority; Connected Communities and Network BC of the Ministry of Citizens' Services shared that connectivity is foundational to government priorities. BC's Economic Plan, the *Declaration Act*, and the Ministry Mandate are three plans of action that aggressively accelerate the timeline to connect all BC communities and First Nations to high-speed internet services and networks.

Connectivity affects various mandates of other ministries like the Ministry of Public Safety and Solicitor General where access to justice is dependent on connectivity. Ankle monitors need connectivity to work and if connectivity is not available, this type of justice or sentence is not possible. Other ministries affected by connectivity are healthcare and education.

The goal is to achieve that every home and that of First Nations be connected by 2027.

6.1 Connected Communities and Networks BC Presentation (Cont'd)

Service providers and community relationships are important because after the projects are funded by the government and completed the service providers must be held accountable for the service they provide.

The next Connectivity Report will be released in the Spring of 2024. BC Stats analyzed the short and Long-term impacts of connectivity funding for rural regions of BC. Stats show that connectivity investments in the North deliver seven times the economic return from approved provincial funding over the longer term (approximately \$16,150 per person).

Various funding and projects have been implemented to close the digital divide such as Connecting BC, Universal Broadband Fund, New Highway Cellular funding, Connecting Communities. The Provincial Government has invested 584 million into connectivity. Nearly all the money is used for projects that are in-flight projects, but there is still money available to be utilized.

A total of 3 project applications have been received for Zone 3 one from each intake, and these are in assessment. There is still an intake open until June 20, 2024. The program will continue to have an open intake until it has the maximum projects that cover the terrestrial terrain.

Currently there are 8,900kms of highway with LTE cellular coverage and 15,000 kms total of highway in BC. Connecting British Columbia program funded 532kms of highway, 33 rest areas, and five emergency call boxes. In 2023 \$75 million to expand cellular service to another 550kms. NDI administers this funding. This cellular program intake is open. The roads that do not have power need a different solution for connectivity and cell to satellite is currently being piloted to provide this type of solution. Call boxes are also used.

There is currently only one Leo Satellite provider in Canada that serves Leo satellite service.

Starlink is moving into the mobile space and makes satellite dishes available for mobile units. Starlink is still waiting to deploy all their services in Canada.

Connected Families is a program where the service providers provide low-cost plans for low-income families. Northwest Tel, Rogers, and TELUS are the service providers involved in this program.

Connectivity Programs provide the first step funding for infrastructure and allow communities to realize the benefits of digital access. There is a need to enhance government coordination and programming to meet the high demands as more communities are connected. When connectivity is not included in infrastructure plans you can end up with an infrastructure project that does not meet your needs such as a water treatment plant that was constructed but could not be fully operational because of the lack of connectivity. Connected Communities and Networks BC are working with other ministries to be sure that connectivity is a part of any infrastructure plan or build.

6.1 Connected Communities and Networks BC Presentation (Cont'd)

Director Quibell left the meeting at 11:35 am and did not return.

A question-and-answer period ensued, and discussion included:

- Leo Satellite dependency and deployment for the remaining 8 or 9% (20,000 homes) in remote areas all over BC. Terrestrial builds that were thought to be far off are moving forward. Planetworks' has had great success and involvement with a project near Atlin.
- Discussion as to where the remote homes that would need satellite deployment are located and that there is no one set area but that they exist all over BC.
- Internet Service Providers (ISP) collaboration with government and the slight shift in those companies who only focused on profitability are now shifting to an interest to expand services to remote areas.
- Why the Alaska Highway, which is a primary highway, is getting emergency call boxes rather than more substantial mobile connectivity infrastructure. It is important to note that because of Leo Satellite technology and terrestrial cellular, this year we will be able to call 911 when out of cellular range and within two years we will be able to text and complete a voice call.
- Government investing in terrestrial builds at this point along with satellite because terrestrial builds are more reliable and resilient than satellites right now.
- Roaming agreements and how they help us stay connected. ROGERS roams on all of TELUS' networks here in BC, but TELUS roams selectively on Rogers' network infrastructure.
- Cell signal and coverage issues and Connected Community delegates will take this information to Rogers for further discussion.

Director Veach left the meeting at 11:48 a.m. and returned at 11:51 a.m.

7. CORRESPONDENCE

8. REPORTS

8.1 Contract Award – Planetworks Consulting (RFP 12-2024), ADM-BIMC-023

MOVED Director Veach

SECONDED Director Sperling

That the Broadband Internet and Mobility Committee recommend that the Regional Board award the contract for "Regional Connectivity Strategy Report RFP 12-2024" to Planetworks Consulting Corp. at the cost of \$92,740.00 (excluding taxes); further that the Chair and Chief Administrative Officer be authorized to sign the contract on behalf of the Regional District.

CARRIED

Vice Chair Quibell, District of Hudson Hope left the meeting at 11:55 a.m. He did not return.

9. NEW BUSINESS



10. CONSENT CALENDAR

11. ITEMS OF INFORMATION

- 11.1 Telecom Decision CRTC 2024-69
- 11.2 Northeast Connectivity NDIT Funded Projects
- 11.3 Terms of Reference
- 11.4 Broadband Internet and Mobility Committee - Guiding Principles
- 11.5 Bylaw No. 2487, 2022

13. ADJOURNMENT

The Chair adjourned the meeting at 11:57 a.m.

CERTIFIED a true and correct copy of the Minutes of the Broadband Internet and Mobility Committee Meeting held on April 24, 2024 in the PRRD Board Room, 1981 Alaska Avenue, Dawson Creek, BC.

Leonard Hiebert, Chair

Terri Henrickson, Regional Connectivity
Coordinator/Recording Clerk

DRAFT



PRRD: Regional Connectivity Strategy Report

Project Review & Status – Halfway
Broadband Internet and Mobility Committee
July 17, 2024

PW Project: 2024-20
 Presented by: Susanna Reardon, P.Eng.
 Client: Peace River Regional District (PRRD)



1

Project Approach

Phase 1: Collect information regarding connectivity using publicly available information

Phase 2: Conduct Interviews to verify collected information and discuss potential strategy options to achieve goals; two parallel streams

- *Phase 2.1- Interview Funders and Service Providers*
- *Phase 2.2 – Interview User Representatives*

Phase 3: Generate Report



2

Project Goal Broadband



Develop strategies for PRRD and for the cities, municipalities, electoral districts and First Nations so that every dwelling in every community can affordably access the benefits of 50/10 from at least one service provider.

This involves determining by community, which communities are:

- 50/10 with FTTP
- 50/10 with a technology other than FTTP and will need to be upgraded to FTTP after 2030
- Do not have 50/10 but are either funded for FTTP project or are the subject of funding application before CCBC

2024-20 PRRD: Regional Connectivity Strategy Report- RFP No. 12-2024

3

3

Some FTTP Observations



2024 has been a busy year for FTTP funding and funding applications in the PRRD:

- Service Providers obtained FTTP funding for 5 communities in January 2024, bringing the total to 25 rural communities of 81 total, with FTTP or with approved FTTP funding
- CCBC had two application intakes ending March 2024 and June 2024 where we believe between the two intakes, CCBC received applications for 82+ rural communities in the PRRD, indicating application overlap among service providers

Only one service provider is awarded FTTP funding per community

Once CCBC processes the funding applications and negotiates with the service providers, it will be very important for PRRD to re-evaluate next Spring which rural communities are funded and which got cut.

Once funding is in place, the next challenge will be to ensure that the service providers build the network as funded.

2024-20 PRRD: Regional Connectivity Strategy Report- RFP No. 12-2024

4

4

Project Goal Cellular



Develop strategies for the PRRD and for the cities, municipalities, electoral districts and First Nation so that all highways and major roads within the PRRD have cellular coverage for at least emergency messaging calling.

- This involves determining which highways and communities have cellular coverage, the cost to infill the coverage holes and weighing these costs against technologies like LEO which now allow emergency texts and will evolve

Develop strategies for every PRRD community to be able to access the benefits of 5G from at least one service provider.

- This involves identifying which communities have available cell tower infrastructure.

2024-20 PRRD: Regional Connectivity Strategy Report- RFP No.
12-2024

5

5



Questions?

www.planetworks.ca

6

6

From: Kerry Newkirk <knewkirk@nwtel.ca>

Sent: Wednesday, May 1, 2024 10:43 AM

To: prrd dc <prrd.dc@prrd.bc.ca>

Cc: Terri Henrickson <Terri.Henrickson@prrd.bc.ca>; Trevor Ouellette <Trevor.Ouellette@prrd.bc.ca>

Subject: Northwestel fibre project

Hello Chairperson Sperling,

I have reached out to PRRD staff to describe a planned project before the BC government for consideration and to request a letter of support and they suggested I reach out to you directly.

Northwestel provides Internet and landline services as far south as Upper Halfway on up to the BC border. Despite the main Alaska highway having a fibre line, residents along this route are still being served on an aging copper plant. While federal funding through the CRTC and ISSED have been available for some years, it has taken a bit of coordination with the CCBC to get a proposal together that could work within the available funding parameters.

The proposal that we now have before CCBC would include residential fibre deployment to certain communities within the PRRD. Specifically, Upper Halfway, Buckinghorse, Pink Mountain, Truch and Wonowan. A basic rule of thumb in looking at an individual residence is that if it has copper service from us now in these areas, they will be converted to fibre. Along with fibre services comes access to an array of plans from data limited low-cost options similar to existing to data unlimited plans and speeds up to 500Mbps symmetrical. For many customers, the move to unlimited plans that cost a little bit more, saves them from paying overages as they experience on data limited plans. A proxy for what our tariffed rates would be for fibre served areas can be found on our website by inputting Watson Lake Yukon as your location. We are also participating in the voluntary Connecting Families program where low-income households can receive a significantly discounted service.

These speed and costs savings, along with the improved reliability of fibre opens a world of opportunities for individuals that range from better access to online health services, education, remote work and personal streaming. The latter also helps improve the attractiveness of remote areas for residency.

While the program funding is limited to residential services, we have seen in other areas that business services can also benefit from the presence of fibre in certain communities. I should underline though that this is a residential proposal and is best suited to those individuals who have existing services in community centres. Individual and part-time occupancy cabins are possible to connect, the program does not provide support for these and as such they can be cost prohibitive to connect. LEO satellite solutions are often the only option for truly remote areas.

Should program funding be confirmed in a timely manner, we would commence with the survey portion of the work this year, order expect our custom fibre to be delivered in early 2025 and service to be in place later that year. During project construction we do favour local service providers as possible for services such as brushing and lay up yards, but much of the actual hanging of fibre on the existing poles is performed by specialists. At this point in time project scope is limited to Northwestel communities along the Alaska highway as noted above (Fort St. John and Buick Creek for example are Telus communities).

Although we understood letters of support would not be required by CCBC, they have recently asked for them and identified PRRD specifically. The turn-around time request from CCBC is now for mid-May which, while we believe is tight, would help to keep us on track for an overall in service date of 2025.

Any assistance you could provide in supporting this project would be sincerely appreciated. If you have any questions, please do not hesitate to reach out to me,

Thank you,
Kerry

Kerry Newkirk (he, him)
Director, Indigenous and Stakeholder Relations
C 403-660-6378 | E knewkirk@nwtel.ca | www.nwtel.ca/reconciliation



Thank you • Quana • Mǎhsi' Choo • Mǎhsi' Cho • Sógá Sénlá' • Másin Cho • Shǎw Nithǎn
Gǔnèłchish • Gunatchish • Tsin'jǐ Choh • Mársı • Kinanǎskomitin • Hǎj' • Merci • Mǎhsi
Mǎhsi • Mahsi • ᑭᑦᑲᑦᑲᑦ • Nakurmiik • Wuujǫ aasanaláá • Musi • Měduh • Quyanainni



PEACE RIVER REGIONAL DISTRICT

From the Offices of PRRD
Electoral Area Directors

May 10, 2024

File: 5500.21



Kerry Newkirk
Director, Indigenous and Stakeholder Relations
NorthwesTel

Via email: knewkirk@nwtel.ca

Dear Mr. Newkirk,

Re: NorthwesTel Residential Fibre Deployment Project in Peace River Regional District

At the May 9, 2024 Electoral Area Directors Committee meeting, the Electoral Area Directors discussed the request from NorthwesTel for a letter of support regarding a project proposal that is before the Connecting Communities BC Program (CCBC) for residential fibre deployment to Upper Halfway, Buckinghorse, Pink Mountain, Trutch, and Wonowon within the Peace River Regional District (PRRD).

After consideration and discussion, the Electoral Area Directors Committee subsequently passed a resolution to send a letter to request answers to the Director's questions seeking the following information:

- Please provide a detailed map with additional information regarding the proposed construction route and infrastructure plans, particularly focusing on the areas of Upper Halfway, Buckinghorse, Pink Mountain, Trutch and Wonowon within Area B of the PRRD.
- Please provide a detailed scope of work regarding this project. This would include a breakdown of tasks, timelines, and any other relevant information to help us better understand the project's execution plan.
- We are interested in gaining insight into how this project will directly or indirectly benefit the communities mentioned above. Specifically, include any details on potential improvements in connectivity, access to services, and economic opportunities resulting from the implementation of the fibre service.
- Please provide the strategy for integrating last-mile connections into the project to ensure accessibility for all residents, businesses, and industry, especially those in remote or underserved areas within the PRRD. Any plans or considerations in this regard would be valuable for our assessment.
- Lastly, is there any consideration for future expansion or extension of the fibre service beyond the initial scope? Will other last-mile ISPs be allowed to utilize this expansion, or will it be restricted to NorthwesTel only? Describe any potential capacity for future expansion, and how this might impact communities within the PRRD.

The Electoral Area Directors are asking that this information be provided for consideration at their next meeting to be held on June 13, 2024. When the information is provided, a decision will be made on the request for a Letter of Support. Please be aware that the deadline to receive your response in time for the June 13, 2024 meeting is no later than June 4, 2024 at 2:00 p.m.

diverse. vast. abundant.

Kindly direct the requested responses to Carmen Willms, Legislative Services Coordinator, via email to Carmen.Willms@prrd.bc.ca on or before June 4, 2024. The information requested will be considered by the Directors at the June 13, 2024 Electoral Area Directors Committee meeting and will help reach a decision regarding this request.

Sincerely,

Leonard Hiebert

Leonard Hiebert,
Committee Chair

Hello Carmen,

Thank you for providing this letter, I appreciate that the committee took the time to review the proposal. These questions echo the ones that were proposed following our meeting and I did my best to address those that I could in the request. Unfortunately, given that we are at the proposal stage, there are not answers to these questions at this time. For example, we do not have detailed maps nor do we have detailed scopes of work. As I noted doing during our meeting, workflow looks like this:

- the survey stage where two workers measure the distances between poles, summer 2024 if approved,
- detailed design work over the fall/winter and ordering of fibre, and
- construction which constitutes lashing fibre to the existing copper, summer 2025.

I appreciate that there is interest in the details, but there is not much more to it than that at this point, we don't do detailed design work without having the funding in place, nor can we predict specifically which households will be connected beyond the general statement of if they have copper now they will likely be included in the build.

We have struggled to get to this point with the funding vehicles and have included a plan to reach the core communities mentioned, we do not have a second phase proposal envisioned at this time.

I need some guidance here. As we discussed, the BC government surprised us with the request for support letters with a very short turn around (next week) and I don't have answers to the questions posed by the Municipality. I am reticent to respond line by line saying nothing new but want to be respectful of the engagement. Given that the support letter will now be well past the deadline, may I instead offer to meet virtually to go over the project and answer what questions I can directly? This at least will accomplish a good level of information exchange and start a dialogue should the project progress.

Thanks,
Kerry

May 30, 2024

PO Box 810
1981 Alaska Ave
Dawson Creek, BC
V1G 4H8

Committee Chair Heibert,

Re: NorthwesTel Residential Fibre Deployment Project in Peace River Regional District

Thank you for taking the time to consider our request to provide a letter of support for our proposed northern BC fibre project. Unfortunately, at this time there is limited additional information that I can provide to you regarding the project as we are within the application stage and have not completed the detailed engineering. As such, and in order of you incoming letter of May 10, 2024:

- We do not have a detailed map of the proposed service coverage beyond the notes provided in my May 1st, 2024 email (i.e. those with existing copper service within Upper Halfway, Buckinghorse, Pink Mountain, Truch and Wonowan).
- The proposed workflow is:
 - Survey summer 2024 if approval is received soon,
 - Detailed design work over the fall/winter and ordering of fibre, and
 - Construction summer 2025, service later that year.
- The benefits regarding connectivity are increased speeds, access to unlimited plans, and increased reliability. These in turn support improved social outcomes through access to services and local economic opportunities including in particular the ability for residential customers to access services and potentially create home-based businesses. It is noteworthy that the funding that supports this proposal is targeted at residential connections.
- I am not sure what you are asking regarding 'integrating last-mile connections into the project,' this is solely a last mile fibre project connecting the existing transport fibre to the customer. As noted previously, the proposed project generally follows the existing copper plant (in fact much of the fibre will be lashed to this existing plant). Although there are sometimes a few examples of individual locations that are close to the footprint that could be added on a case-by-case basis, there are no plans to expand this footprint as it is cost prohibitive
- ISPs will have access to this infrastructure through existing and regulated wholesale mechanisms.

While we believe that the original short window within which CCBC has asked for support letters has passed, any formal support the PRRD should wish to provide will be forwarded to the CCBC and may help advance approvals in a timely manner allowing us to commence survey work in 2024.

Thank you,



Kerry Newkirk



REPORT

To: Electoral Area Directors Committee

Report Number: ADM-EADC-057

From: Corporate Administration

Date: June 13, 2024

Subject: NorthwesTel Residential Fiber Deployment Project in PRRD

RECOMMENDATION:

That the Electoral Area Directors Committee recommend that the Regional Board refer the NorthwesTel Residential Fiber Deployment Project in Peace River District Letter of Support request to the July 17, 2024 Broadband Internet and Mobility Committee meeting for further review and consideration; further, that the Regional Board invite NorthwesTel to present the proposed NorthwesTel last mile project at the July 17, 2024 Broadband Internet and Mobility Committee meeting.

BACKGROUND/RATIONALE:

On May 9, 2024 the Electoral Area Directors Committee passed the following resolution:

MOVED, SECONDED and CARRIED,

"That the Electoral Area Directors Committee send a letter to NorthwesTel to request responses to the following questions:

- Whether there will be availability for residents/businesses to connect into the project;*
- Whether any capacity/plans for expansion of the project exist to ensure accessibility for those in remote underserved areas within the PRRD;*
- What the scope of work, benefits and timeline are, and if a detailed map can be provided showing the full extent of the project;*

further, that the information requested be provided for consideration at the June 13, 2024 EADC meeting."

NorthwesTel was contacted on May 10, 2024 requesting the additional information before the Committee decided on a letter of support. The representative from NorthwestTel provided the attached email response and also offered/requested to meet virtually to discuss the project and answer questions. A formal letter response letter from NorthwesTel was received on May 30, 2024 addressed to Director Hiebert, EADC Chair, and is also attached to this report.

As the urgency to provide a letter of support for a funding application to Connecting Communities BC (CCBC) Provincial grant program is no longer applicable, given that the deadline for current intake was mid-May, it is suggested that the request for support be referred to the Broadband Internet and Mobility Committee where it properly belongs.

ALTERNATIVE OPTIONS:

1. That the Electoral Area Directors Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

☒ Not applicable to Strategic Plan

FINANCIAL CONSIDERATION(S):

None.

COMMUNICATIONS CONSIDERATION(S):

None.

OTHER CONSIDERATION(S):

Northwestel noted that the original CCBC deadline for a letter of support is now over, but any official support from the PRRD will be sent to the CCBC and may speed up approvals to allow them to begin survey work in 2024.

Attachments:

1. Letter from Northwestel Re: Letter of Support May 1, 2024
2. Letter from EADC to Northwestel Re: Letter of Support Request May 10, 2024
3. Response from Northwestel Re: Letter of Support Questions May 10, 2024
4. Response from Northwestel Re: Letter of Support Questions May 30, 2024

External Links:

1. [Letter from Northwestel Re: Letter of Support](#)
(May 9, 2024 Electoral Area Directors Committee Agenda, Item 7.1)

Conquering the Next Frontier in Bridging the Digital Divide

Ian Scott

IN BRIEF

Having reliable access to the internet is a fundamental part of everyday life — but not for everyone. Indigenous and northern communities are behind the rest of Canada in being able to access the internet at speeds needed to take advantage of essential online services, such as health care, education, banking and employment. Low-income Canadians struggle to afford the technology and internet plans needed to access these services. To close these gaps, this paper identifies new approaches governments can take to address the needs of underserved communities and improve the affordability of the internet for low-income Canadians.

EN BREF

Disposer d'un accès Internet fiable est un aspect essentiel de la vie quotidienne, mais ce n'est pas le cas pour tout le monde. Les communautés autochtones et nordiques sont en retard par rapport au reste du Canada en ce qui concerne l'accès à Internet aux vitesses nécessaires pour profiter des services en ligne essentiels, tels que les soins de santé, l'éducation, les services bancaires et l'emploi. Les Canadiens à faible revenu ont du mal à s'offrir la technologie et les forfaits Internet nécessaires pour accéder à ces services. Pour combler ces lacunes, cette étude identifie de nouvelles approches que les gouvernements peuvent adopter pour répondre aux besoins des communautés mal desservies et améliorer l'accessibilité financière d'Internet pour les Canadiens à faible revenu.

ABOUT THIS PAPER

This paper is the third in a three-part IRPP research publication and lecture series, *Imagining a Better Digital Future for Canada*, sponsored by TELUS. It was developed under the direction of vice president of research Rachel Samson and senior writer and editor Rosanna Tamburri, with the support of lead data analyst Ricardo Chejfec and research associate Zakaria Nadir. Proofreading was by Zofia Laubitz, editorial co-ordination was by Étienne Tremblay, production was by Chantal Létourneau and art direction was by Anne Tremblay.

Ian Scott is a Canadian telecom executive who served as the chair of the Canadian Radio-television and Telecommunications Commission from 2017 to 2023.

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HIGHLIGHTS

Having reliable access to the internet is a fundamental part of everyday life — but not for everyone.

The Canadian Radio-television and Telecommunications Commission, an administrative tribunal that regulates and supervises broadcasting and telecommunications, declared in 2016 that broadband internet with download speeds of at least 50 megabits per second and upload speeds of at least 10 megabits per second was a basic telecom service. And the federal government has set a goal of connecting 98 per cent of Canadians to high-speed internet by 2026 and 100 per cent by 2030, a goal it is on target to meet.

Despite significant public and private investment, glaring gaps in service remain. Indigenous and northern communities are woefully behind the rest of Canada in being able to access the internet at speeds needed to take advantage of essential online services such as health care, education, banking and employment. Only half of households in First Nations communities and 58 per cent of households in northern Canada meet the basic service target.

These challenges are not limited to rural and remote areas. Low-income Canadians, regardless of where they live, struggle to afford the technology and internet plans needed to take full advantage of the digital economy.

This paper argues that, to close these gaps, governments should pursue new approaches that address the needs of underserved communities and improve the affordability of the internet, including the following:

- **Improve co-ordination within and across governments** — Improved co-ordination between the federal and provincial and territorial governments could help overcome the CRTC's lack of direct jurisdiction over some types of infrastructure, including municipal facilities and utility poles, that are necessary to expand broadband infrastructure. There should also be improved co-ordination among federal government departments in developing more effective relationships with Indigenous communities and exploring the potential for more Indigenous-owned fibre assets, and in working together to improve affordability of broadband service for low-income households.
- **Prioritize northern and Indigenous communities** — Indigenous and northern communities have the lowest level of high-speed internet access. Internet service in the territories is provided by a small number of firms in challenging conditions. Improving access to these areas will require government involvement, either through subsidies or capital investment. New satellite technology could hold promise.
- **Expand discounted internet plans** — Existing government and private-sector efforts to improve affordability of high-speed broadband services are making progress but there is more to do. The federal government should commit to providing the necessary funding to expand existing support programs, possibly

from the proceeds of spectrum auctions. Innovation, Science and Economic Development Canada and Employment and Social Development Canada should jointly develop an easy-to-use program to defray internet costs for low-income households.

Canada prides itself on its superior social safety net, but still has not found a solution to address the affordability and adoption challenges of providing access to high-speed broadband internet to low-income households and northern and Indigenous communities. These should be the key priorities of the government's future efforts to conquer the next frontier of the digital divide.

FAITS SAILLANTS

Disposer d'un accès Internet fiable est un élément fondamental de la vie quotidienne, mais tout le monde n'y a pas accès.

Le Conseil de la radiodiffusion et des télécommunications canadiennes (CRTC), un tribunal administratif qui réglemente et supervise la radiodiffusion et les télécommunications, a déclaré en 2016 qu'Internet à haut débit avec des vitesses de téléchargement d'au moins 50 mégabits par seconde et des vitesses de téléversement d'au moins 10 mégabits par seconde était un service de télécommunications de base. Le gouvernement fédéral s'est fixé pour objectif de connecter 98 % des Canadiens à Internet haute vitesse d'ici 2026 et 100 % d'ici 2030, un objectif qu'il est en passe d'atteindre.

Malgré d'importants investissements publics et privés, des lacunes flagrantes subsistent dans les services. Les communautés autochtones et nordiques sont terriblement en retard par rapport au reste du Canada en ce qui concerne l'accès Internet aux vitesses nécessaires pour profiter des services en ligne essentiels tels que les soins de santé, l'éducation, les services bancaires et l'emploi. Seulement la moitié des ménages des communautés des Premières Nations et 58 % des ménages du Nord du Canada atteignent l'objectif de service de base.

Ces défis ne se limitent pas aux zones rurales et éloignées. Les Canadiens à faible revenu, quel que soit leur lieu de résidence, ont du mal à s'offrir la technologie et les forfaits Internet nécessaires pour tirer pleinement parti de l'économie numérique.

Cette étude avance que, pour combler ces lacunes, les gouvernements devraient adopter de nouvelles approches qui répondent aux besoins des communautés mal desservies et améliorent l'abordabilité d'Internet, y compris les suivantes :

- **Améliorer la coordination au sein des gouvernements et entre eux** – Une meilleure coordination entre les gouvernements fédéral, provinciaux et territoriaux pourrait aider à surmonter l'absence de compétence directe du CRTC sur certains types d'infrastructures, notamment les installations municipales et les poteaux électriques, qui sont nécessaires à l'extension de l'infrastructure à large bande. Il faudrait également une meilleure coordination entre les ministères fédéraux pour développer des relations plus efficaces avec les communautés autochtones et explorer le potentiel d'un plus grand nombre d'actifs de fibre optique appartenant aux Autochtones, et pour travailler ensemble afin d'améliorer l'accessibilité des services à large bande pour les ménages à faible revenu.
- **Donner la priorité aux communautés autochtones et du Nord** – Elles sont celles qui ont le moins accès à Internet haute vitesse. Dans les territoires, le service Internet est fourni par un petit nombre d'entreprises privées dans des conditions difficiles. L'amélioration de l'accès à ces zones nécessitera l'intervention des pouvoirs publics, sous la forme de subventions ou d'investissements en capital. La nouvelle technologie satellitaire pourrait s'avérer prometteuse.

- **Élargir les forfaits Internet à prix réduit** – Les efforts gouvernementaux et privés pour améliorer l’abordabilité des services haute vitesse progressent, mais il reste encore beaucoup à faire. Le gouvernement fédéral devrait s’engager à fournir le financement nécessaire pour étendre les programmes de soutien existants, éventuellement à partir du produit des enchères de licences de spectre. Innovation, Sciences et Développement économique Canada et Emploi et Développement social Canada devraient développer conjointement un programme facile à utiliser pour prendre en charge les coûts d’Internet pour les ménages à faible revenu.

Le Canada s’enorgueillit de son filet de sécurité sociale développé, mais il n’a toujours pas trouvé de solution pour relever les défis de l’abordabilité et de l’adoption de l’accès à Internet haute vitesse pour les ménages à faibles revenus et les communautés nordiques et autochtones. Telles devraient être les principales priorités des efforts futurs du gouvernement pour franchir la prochaine frontière numérique.

INTRODUCTION

Consider for a moment the many benefits of connecting to the internet. It serves as a vast repository of information, enabling instant access to knowledge on virtually any subject and is revolutionizing education, research and learning. The internet also facilitates global communications, connecting people anywhere and everywhere in real time. This connectivity enhances social interaction, both personal and professional, and is pivotal for businesses, both large and small. Finally, the internet has become a cornerstone for news and entertainment, offering streaming audio and audiovisual services, social media and gaming. In short, the internet has become a fundamental component of everyday life — but not for everyone. Many Canadians remain disconnected.

Governments at all levels are increasingly focused on ensuring broad access to the internet. In Canada, the first principle of the *Digital Charter Implementation Act* (Bill C-27), tabled by the federal government in 2022, proposes that “all Canadians will have equal opportunity to participate in the digital world and the necessary tools to do so, including access, connectivity, literacy and skills” (Innovation, Science and Economic Development Canada, n.d.-a).

The concept of internet access as a basic need is not new. In 2016, the Canadian Radio-television and Telecommunications Commission (CRTC), which supervises and regulates broadcasting and telecommunications, declared broadband internet with download speeds of at least 50 megabits per second (Mbps) and upload speeds of at least 10 Mbps to be a basic telecom service. In the same decision, the CRTC announced a \$750-million broadband fund to further the rollout of high-speed internet in underserved regions (CRTC, 2016).

Fast forward to 2020, in the midst of the global COVID-19 pandemic, when Prime Minister Justin Trudeau announced an investment of an additional \$1.75 billion to help connect Canadians across the country (Prime Minister of Canada, 2020). The Universal Broadband Fund, also launched in 2020, provides \$3.23 billion to bring internet at speeds of 50/10 (download/upload) Mbps to rural and remote communities (Innovation, Science and Economic Development Canada, n.d.-b). Combined with previous funding for various broadband programs dating back to 2015, more than \$7.6 billion has been allocated to improving connectivity with a goal of connecting 98 per cent of Canadians to high-speed internet by 2026 and 100 per cent by 2030 (Innovation, Science and Economic Development Canada, 2022a). The government of Canada has also entered into co-funding partnerships with Quebec, Ontario, Newfoundland and Labrador, Alberta, British Columbia and Prince Edward Island, adding nearly \$2 billion in provincial co-funding to help meet national connectivity targets faster.

With broadband coverage on target to connect 100 per cent of Canadians to high-speed internet by 2030, some may mistakenly believe that Canada is close to claiming success in bridging the digital divide.¹ There remain, however, some glaring gaps.

¹ The origin of the term “digital divide” is most often traced back to a series of reports published by the U.S. National Telecommunications and Information Administration (1995).

Indigenous and northern communities remain woefully behind the rest of Canada in terms of the availability of internet at speeds needed to take full advantage of essential services such as health care and education. Only half of households in First Nations communities and 58 per cent of households in northern Canada meet the basic service target (CRTC, n.d.).

A lack of connectivity impacts access to government services and information, banking, health care, education and employment. Telehealth services enable patients to consult with doctors and nurse practitioners without travelling long distances, thus improving badly needed health care access. Similarly, online education platforms support students and educators in isolated areas. Without adequate connectivity, Canadians living in these regions lack access to these essential services.

A lack of connectivity also impacts opportunities for economic growth and prosperity. Substandard access limits e-commerce, denying local entrepreneurs the opportunity to reach national and global markets. It also limits remote work that provides job opportunities and reduces the need to relocate.

These challenges are not limited to rural and remote areas. Regardless of location, low-income Canadians struggle to afford the technology and internet plans needed to take full advantage of the digital economy.

The COVID-19 pandemic aptly illustrated our dependence on the digital economy: many people relied on internet access to work, shop, connect with friends and family, and receive health information and services. Those who were not connected were simply left behind.

To overcome these gaps, governments should pursue new approaches that address the needs of underserved communities and improve the affordability of the internet. This paper explores both issues and provides recommendations to conquer the next frontier in bridging the digital divide.

AVAILABILITY OF BROADBAND INTERNET

It has been eight years since the CRTC declared broadband to be a basic service objective, established an aspirational broadband speed and allocated more than \$8 billion in infrastructure investment. That aspirational broadband speed is entrenched in current government policy and often subjected to negative commentary for being out of date. Internet speeds are typically defined in terms of megabits per second (Mbps) for downloading and uploading data. Download speed is the speed at which data, including files, websites, pictures, music and movies, is delivered from the internet to a user. Upload speed is the speed at which data is travelling to the internet. Upload speeds are typically much lower than download speeds; as a rule of thumb, usually around 20 per cent of the download speed.

In either case, the bigger the number, the better the performance. At the same time, the number of users and devices has a major impact. Table 1 illustrates typical broadband

speeds for various online activities. Put simply, lower broadband speeds and lots of devices will result in slower connections to the internet.²

The CRTC’s original target speed of 50 Mbps downstream remains relevant because it can easily support typical household use, for example, simultaneously supporting email and browsing, music streaming and video calls. But with the advent of high definition and 4K video streaming and 4K gaming, the demand for much higher speeds continues to grow.

Table 1. Typical download speed required per activity

Online activity	Speed
Emails and web surfing	0.5 to 1 Mbps
Music streaming	1 to 2 Mbps
SD video streaming	2 to 3 Mbps
Video calls and gaming	3 to 5 Mbps
HD video streaming	5 to 25 Mbps
4K video streaming and gaming	25 to 50 Mbps

Source: Rogers, retrieved May 2024 from <https://www.rogers.com/support/internet/how-much-speed-do-i-need-for-different-online-activities>

The good news is that broadband access for all speeds (in particular, faster speeds such as gigabit access, or 1,000 Mbps) continues to improve across the country as billions of dollars are being distributed from various federal, provincial and territorial funds to successful applicants, helping to leverage billions of additional dollars in private investment.

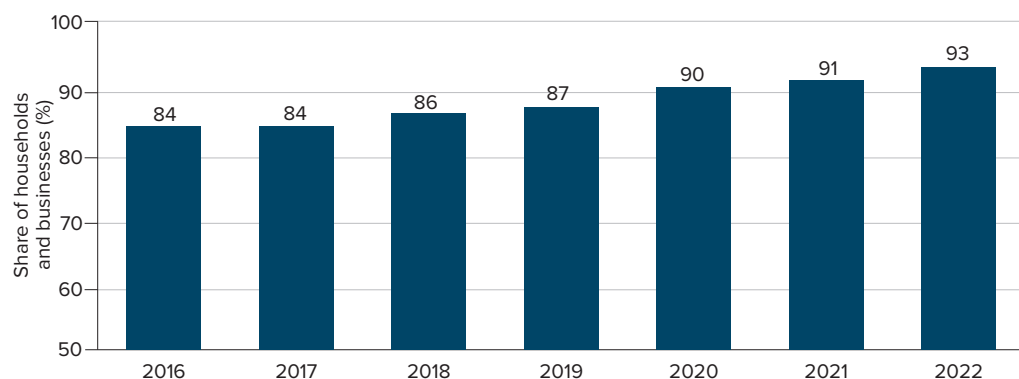
As depicted in figure 1, there has been steady growth in the share of Canadian households and businesses that have access to internet service with speeds of 50/10 (download/upload) and unlimited data transfer, which sits at just over 93 per cent (CRTC, n.d.). At an aggregate level, it appears that Canada is on target to achieve federal goals of connecting 98 per cent of all Canadians to high-speed internet by 2026 and 100 per cent by 2030 (Innovation, Science and Economic Development Canada, 2022a).

The industry, too, has been doing its part, committing significant resources to the geographic expansion of both fixed and wireless broadband. Capital expenditure on broadband (both fixed and mobile) have totalled many billions of dollars since 2017, a significant part of which has gone to support the deployment of fibre to the home, which provides gigabit speed services. In 2020, capital expenditures reached \$10 billion, or roughly \$260 per Canadian (Statistics Canada, n.d.-a). Today, around 83 per cent of Canadian homes have access to gigabit or higher services (CRTC, n.d.). By the end of 2022, 60 per cent of Canadian homes reached by the large telephone companies had access to fibre networks (CRTC, 2023a).³

² An additional factor impacting the quality of an internet connection is latency, which is the time it takes for data to be transferred between its original source and its destination, measured in milliseconds. Internet latency and network latency affect satellite internet connections, cable internet connections and some Wi-Fi connections.

³ Migration to higher-speed internet packages evolved during the pandemic. The proportion of residential subscriptions to services offering speeds of 100 Mbps or faster grew from 47.8 per cent in 2020 to 52.7 per cent in 2021. In 2021, 11.8 per cent of subscriptions were for services offering speeds of at least a gigabit, compared to 8.3 per cent in 2020. See CRTC (n.d.).

Figure 1. Access to high-speed internet among Canadian households is rising
Share of households and businesses that have access to internet service with speeds of 50/10 and unlimited data transfer, 2016 to Q2 2022



Source: Adapted from the CRTC (n.d.).

However, it is too early to declare victory in bridging the digital divide. Important gaps remain, with people falling through the cracks either because the internet is not available at minimum speeds or because they cannot afford it.

According to a survey on Toronto's digital divide by The Dais, cost was a significant barrier to purchasing home internet and cell phone services, and without adequate home internet, individuals lack the ability to access critical services and information. The survey, conducted in 2023, found that, of those without home internet, 29 per cent of respondents said it had impacted their access to government services, 26 per cent said financial services, 24 per cent said education, 18 per cent said health care and 14 per cent said work (Lockhart & Andrey, 2024).

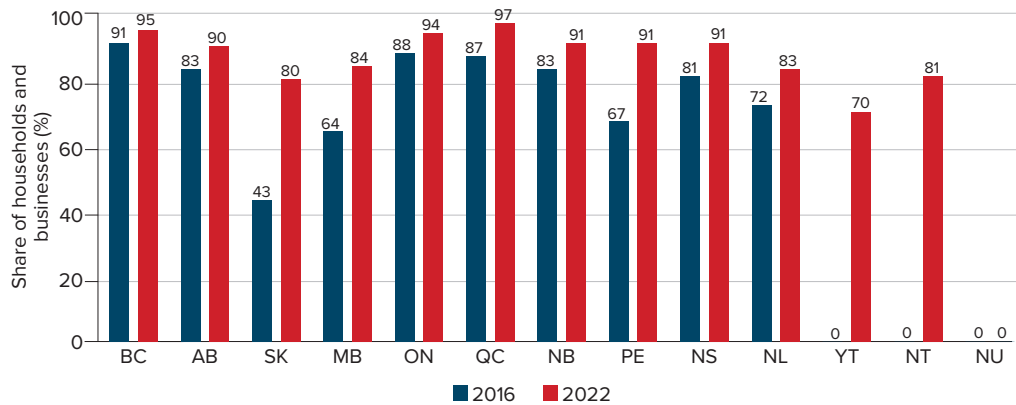
Northern and Indigenous communities

In a 2023 report, Canada's auditor general concluded that, while internet and mobile cellular coverage has improved both nationally and in rural and remote communities, progress on access to high-speed internet and mobile services lags for those living in rural and remote areas, including First Nations communities.

At the end of 2022, 99.4 per cent of urban households had internet speeds available at the 50/10 (download/upload) Mbps target, compared to 67.4 per cent of rural households, 58 per cent of northern households and one-half of First Nations communities (CRTC, n.d.).

In addition, there is significant variation in the progress regarding the availability of target broadband internet speeds by province and territory (figure 2). While Quebec, Ontario and British Columbia are in line with the national average, the rate in other provinces is lower. In Canada's North, the situation is markedly worse, reflecting the economic and physical challenges of building and maintaining broadband infrastructure. Not even one of the 25 communities in Nunavut has access to internet service at the 50/10 (download/upload) target level, with most limited to service at 5 to 25 Mbps and with data caps

Figure 2. There has been significant progress across the country, but gaps remain
Percentage of Canadian households and businesses with access to internet service with speeds of 50/10 and unlimited data transfer, 2016 and 2022



Source: Adapted from the CRTC (n.d.).

(Innovation, Science and Economic Development Canada, n.d.-c). This means that people and businesses in Nunavut cannot participate in video calls or stream videos and have difficulty participating in the digital economy.

Although Canada is generally on track to closing gaps in the availability of internet at minimum speeds, there are several factors that could impede its progress: geography, lack of co-ordination, funding delays, deployment delays and access to passive infrastructure.

In terms of geography, the North represents the most challenging situation. The three northern territories comprise about two-thirds of Canada's total land mass with a population of approximately 130,000 — about the same as that of Kelowna, B.C., or Sherbrooke, Que. (Statistics Canada, n.d.-b). Many parts of the North are accessible only by plane or by sea. For example, construction materials and essential supplies for Nunavut and Nunavik are sent by sea lifts, which operate seasonally because of ice conditions, and are often booked months or a year in advance. In other areas, road access is limited to when winter ice roads are in operation. In addition, construction techniques must be adapted to build on

Connectivity that is unaffordable or of poor quality will be little improvement over having no connectivity at all for Canadians. The impact of unaffordable access is felt by those communities who need it most, namely those living on First Nations reserves or in rural and remote areas.

Office of the Auditor General of Canada (2023, p. 3)

permafrost and sufficient skilled labour to do the work is not always readily available. The situation in the Northwest Territories and the Yukon is comparatively better (at least in the larger communities) because they are connected to the south by fibre rather than being

entirely satellite dependent for the transport component of the network.

One 2022 study found that the costs of providing mobile wireless services in Canada were 103 per cent higher than in a selection of peer countries and 44 per cent higher than those in the U.S. (Christensen Associates, 2022).

A lack of co-ordination between government departments and agencies operating in Indigenous communities also presents a major challenge because these communities face multiple intersecting social and economic challenges and may lack the capacity to deal with different departments. To date, there has been little co-ordination between federal departments and agencies to improve broadband internet availability or to develop a common approach to community engagement.

A related criticism identified by the auditor general (2023) was the delays in funding projects. The report points out that, of the federal funding available for use by the end of the 2022-23 fiscal year, 40 per cent was spent as of January 2023 (that's \$949 million of the \$2.4 billion available). While it is true that government programs are taking longer than expected to identify and fund viable projects, the proportion of funds *committed* to projects is higher than 40 per cent. Like many construction projects, funding is tied to various benchmarks within the larger project schedule and monies are dispersed at various stages of the process. As a result, funds committed to a project may be paid out over several years.

A lack of co-ordination within the federal government and between the federal government and the provinces and territories also impacts the length of time it takes to identify and fund projects. While Innovation, Science and Economic Development Canada (ISED) has primary responsibility for overseeing Canada's Universal Broadband Fund, it needs to work closely with other departments and agencies. A good example is ISED's relationship with the CRTC, which requires major telephone and cable companies to provide third-party providers with access to their fibre networks at regulated wholesale rates. In setting the rates, the CRTC balances affordability concerns with the returns required for the large companies to invest in their networks. The CRTC also has its own \$750-million fund to invest in broadband infrastructure.

While the CRTC and ISED share information and co-ordinate their actions to some extent, they are limited by the fact that the CRTC is a quasi-judicial tribunal that operates at arm's length from government. In practice, this precludes the CRTC from sharing information about its deliberations or communicating its decisions (including those related to funding broadband projects) with ISED or any other part of government before they are published.

Another area of concern relates to the length of time to deploy or build facilities, particularly in rural areas. Supply-chain issues with fibre-optic cable and the associated electronics products as well as labour shortages are both major factors. While little empirical data specific to the telecommunications industry is available, labour shortages that began during the COVID pandemic continue to impact all sectors of the economy. In March 2024, there were 44,680 vacant positions in the construction industry, although the number has declined over the past two years (Statistics Canada, 2024a). In the United States, the Fiber Broadband Association, along with 10 other telecom trade associations, wrote to Congress claiming that the industry would need around 850,000 new skilled technicians to plan, build, install and maintain the networks being built over the next five years (Wireless Infrastructure Association et al., 2021).

Access to passive infrastructure, such as privately owned buildings and provincially owned utility poles, is also an impediment. The CRTC has jurisdiction over “transmission lines” as prescribed in the *Telecommunications Act*, but it is limited. Under the current act, the CRTC has limited direct jurisdiction over support structures, public property and privately owned buildings. The CRTC has used its condition of service powers under section 24 of the act to order access in certain cases. However, it does not currently have the explicit powers to resolve disputes, order access or establish guidelines regarding all support structures on public property or all privately owned buildings (residential or commercial) to facilitate projects. Instead, responsibilities over access to passive infrastructure are currently shared across multiple bodies and levels of government, which presents challenges for efficient and effective deployment of telecommunications infrastructure. Inefficient or delayed access to infrastructure such as poles, ducts and rights-of-way can dramatically increase the cost of deployment or cause facilities not to be built at all. This can slow the rollout of plans to improve access for rural and northern communities.

Low-income households

The 2023 report of the auditor general pointed out that neither the CRTC nor ISED had sufficient indicators to measure progress on the quality and affordability of internet access. The concern raised was that their approach to measuring affordability focused only on price, without considering income. Price alone does not indicate whether a Canadian household can afford internet or mobile cellular service. What is affordable for a household with two people earning \$80,000 per year may not be affordable for a household with six people earning \$30,000 per year.

In a 2020 internet use survey, when people without a home internet connection were asked why they did not have access, 63 per cent reported that they had no need or interest in a home internet connection, while 26 per cent reported the cost of internet service as the reason and 13 per cent cited the cost of equipment (Statistics Canada, 2021).

Almost half of households in Canada with an annual income of \$30,000 or less did not have high-speed internet in 2018. Furthermore, access is worse for those with household incomes below \$10,000. Average household spending on internet access services in 2021 accounted for 1.2 per cent of income. However, for households in the lowest income quintile, it accounted for 1.7 per cent of household income (Statistics Canada, 2023).

Internet service prices grew at a slower pace than overall inflation (CPI) between 2019 and 2021 and declined by 9.6 per cent in April 2024 from the same month a year earlier (Statistics Canada, n.d-a). Still, given that the average expenditure for internet service in Canada was around \$74 a month in 2021, cost is likely a major contributing factor to the digital divide for low-income households facing rising shelter and food costs (Affordability Action Council, 2024).

Government measures to address affordability have evolved over the past five to six years but remain limited. The Connecting Families initiative, established in 2018, is overseen by ISED but relies on internet service providers (ISP) to cover the costs of discounted

plans (Innovation, Science and Economic Development Canada, n.d.-d). While most of the major ISPs participate in the program, participation is voluntary.⁴ Connecting Families 2.0, launched in 2022, introduced significantly faster speeds and increased data usage (Innovation, Science and Economic Development Canada, 2022b). For \$20 a month, internet speeds are five and 10 times faster, respectively, than previously offered. As well, the data allotment doubled, from 100 gigabytes to 200 gigabytes of usage per month.

As of March 2023, more than 85,000 low-income households received a Connecting Families internet package (Innovation, Science and Economic Development Canada, 2023). By comparison, around 3.2 million families and seniors were in the lowest income quintile in Canada (Statistics Canada, 2024b). The second phase broadened eligibility, which will increase coverage. Initially, the program focused on families receiving the maximum Canada Child Benefit payment; that is, those with annual family net income under \$34,863 and with at least one eligible child under 18 years of age. Phase two includes seniors receiving the maximum Guaranteed Income Supplement.

Northwestel joined the Connecting Families initiative in 2023 when the CRTC approved rates to provide eligible low-income Canadians in Northwestel's footprint with access to two internet packages: a plan with 15 Mbps download and 1 Mbps upload with 300 gigabytes of data for \$10, with an overage charge of \$1 per gigabyte; and a plan with the federal objective of 50 Mbps download and 10 Mbps upload with 400 gigabytes of data for \$20 with the same overage charge (Northwestel, n.d.-a). The Connecting Families 1.0 plan is available to all its terrestrial communities, which includes DSL (slowest), cable and fibre (fastest), while the 2.0 version is available only to the cable and fibre communities. The telecom previously said it would not include satellite-dependent communities because none of the other ISPs in the current program provide that service to those areas.

Individual ISPs have also introduced company-specific measures to address affordability. For example, Rogers' Connected for Success program offers high-speed, low-cost internet, TV bundles and mobile services to those receiving eligible provincial income support, disability benefits, seniors receiving the federal Guaranteed Income Supplement, or rent-geared-to-income tenants of non-profit housing partner organizations. The cheapest plan is \$9.99 before tax and offers 25 Mbps download and 5 Mbps upload. The most expensive is \$34.99 before tax with 150/30 Mbps (Rogers, n.d.).

For its part, TELUS' Internet for Good programs provide 25/5 Mbps internet for \$10/month to families receiving disability benefits, low-income seniors, youth aging out of the child welfare system, and students in need in Alberta and British Columbia. And the TELUS Tech for Good program provides 10,000 people living with disabilities training and assistive technology (TELUS, n.d.).⁵

Other measures have been introduced by provincial or municipal governments, but they are highly localized and have limited participation.

⁴ Eighteen ISPs participate in the program including Bell Canada, Cogeco, Vidéotron, Rogers, TELUS and SaskTel (Innovation, Science and Economic Development Canada, n.d.-d).

⁵ Discounted plans for 50 Mbps and 150 Mbps services are also available at \$20 and \$35, respectively.

WHAT CAN BE DONE TO BRIDGE THE GAP?

Improve co-ordination within and across governments

Several of the barriers to expanding the availability of high-speed internet stem from a lack of effective co-ordination between governments at every level — federal, provincial, territorial, municipal and Indigenous. For example, greater co-ordination could help overcome the CRTC's lack of direct jurisdiction over the passive infrastructure needed to expand fibre networks such as support structures, public property and privately owned buildings. Attaching cables and fibre to existing passive infrastructure is a faster and more cost-effective way to build out broadband networks. In rural and remote areas, networks will need to rely on hydro and telephone poles because they are the only existing supporting structures near homes and businesses. However, hydro utilities have little incentive to co-operate with telecoms and it can take months to process and issue the necessary permits and undertake pole retrofits (Rogers, 2022a).

In 2017 and 2018, the minister of ISED convened ministers and senior bureaucrats from federal, provincial and territorial governments to reach an agreement on a long-term strategy to improve access to high-speed internet services (Innovation, Science and Economic Development Canada, 2018). These meetings in turn fostered a number of federal-provincial agreements supporting the build-out of infrastructure capable of providing high-speed internet services. One such agreement, the “Canada-Quebec Operation High Speed” initiative, which included a co-ordinated infrastructure permit process, led to Quebecers having the highest connectivity rate in Canada with a 99 per cent coverage rate (Prime Minister of Canada, 2021).

A renewal of federal-provincial-territorial negotiations could form the basis of a co-operative approach to passive infrastructure. Consider two important pieces of passive infrastructure: access to utility poles of provincial electric utilities and municipally owned light poles. Most electric utilities in Canada are provincially owned and regulated and are strategic provincial assets. In most if not all cases, provinces would be unwilling to cede oversight to federal jurisdiction. A more acceptable model might be to negotiate federal-provincial-territorial agreements that identify specific passive infrastructure and establish a framework with appropriate terms and conditions for access. This could include agreements on methodology and financial considerations. The actual rates and terms would be established by an expert body — most likely, but not necessarily, the CRTC — and applied by the relevant provincial or territorial authority, thus avoiding jurisdictional disputes.

Similarly, in the case of municipal access, the CRTC or another qualified body could develop model access agreements, or templates, to help municipalities avoid reinventing the wheel every time. The model agreements would need to balance the economic interests of municipalities and service providers, and most importantly the public's interest in having available the best technology at reasonable rates. Such an approach is not unproven. In the United States, the Federal Communications Commission enabling legislation provides it with the ability to establish advisory committees and it has used that authority to set up a committee to develop model tariffs for access to certain municipal facilities (Federal Communications Commission, n.d.).

Some observers will no doubt question the utility of such an approach, suggesting it is too simplistic to overcome the complex and conflicting interests of various levels of government and private interests. However, it is no more complex than negotiating funding agreements in support of building out broadband infrastructure. Negotiated outcomes are also likely the only method for resolving jurisdictional conflict in a timely manner because new legislation or revisions to the *Telecommunications Act* would be fraught and potentially face legal challenges from provincial governments.

There is also room for improvement in co-ordination within the federal government. ISED should co-ordinate with Crown-Indigenous Relations and Northern Affairs Canada to develop more effective relationships with Indigenous communities, and to explore the potential for more Indigenous-owned fibre assets, similar to approaches used in the territories. A 2021 report by the Institute for Fiscal Studies and Democracy recommended a single door for federal funding, so that applicants would apply to the same program and officials could work behind the scenes to determine the most appropriate pot of money from which to provide support (Gaspard & Khan, 2021).

On the challenge of internet affordability, ISED should co-ordinate more closely with Employment and Social Development Canada (ESDC), which is the lead department on poverty reduction. ESDC will have a better understanding of the challenges facing low-income households struggling to purchase basic needs such as shelter and food, and the type of supports needed. Currently, affordability programs are insufficient and unco-ordinated, in part because there is no clear government lead (at any level of government) and therefore no real accountability or financial commitment. While many observers might expect that the responsibility would fall to the federal government department responsible for telecommunications policy (ISED), it is equally a social welfare and education issue with mixed responsibility within the federal government and cross-jurisdictionally with provincial, territorial and municipal governments.

Moreover, existing programs rely too much on voluntary actions of the private sector. While ISED worked with industry participants to establish the Connecting Families initiative, the program is voluntary, not national in scope and has no specific elements to measure affordability. Rather than developing programming to address affordability, the policy focus has been on consumer prices for telecom services more broadly, including policy measures to enhance price competition within the industry.⁶ While overall reductions in rates would be helpful, they do not address the affordability issue for those most in need.

Prioritize northern and Indigenous communities

Although the territories and the northern regions of provinces make up a relatively small part of Canada's population, governments should focus on developing policy solutions to address the digital divide in the North, with a particular focus on Indigenous communities. While some might question the logic of having governments focus their limited resources on a small minority of the population, there are good reasons for doing so, starting with Indigenous reconciliation and the security of our borders.

⁶ The most recent example is an Order Issuing a Direction to the CRTC on a Renewed Approach to Telecommunications Policy (Government of Canada, 2023).

Indigenous people in Canada are disproportionately affected by the digital divide, which has had negative impacts on their communities. As already noted, the lowest levels of high-speed internet penetration are in Indigenous communities. As a result, many people in Indigenous communities are unable to access important information about their rights, health care, education and job opportunities.

For example, many communities lack the necessary infrastructure to support online learning, higher education and skills development. Similarly, in health care, the lack of infrastructure limits the availability of telehealth and digital health care resources that can bridge the physical remoteness of many communities. Consider, for example, how improved access to high-speed broadband in Nunavut could make available mental health services desperately needed to combat record high suicide rates (Deloitte Canada, 2024). Expanded availability and adoption of high-speed broadband will also generate economic opportunity for Indigenous communities. Remote work and e-commerce will allow individuals to remain in their communities while pursuing or exploring their entrepreneurial potential. Together, this will help sustain healthier communities throughout the North that are, in turn, a key component of Canada's Arctic sovereignty and the security of our northern border.

Services in the territories are provided by a small number of firms, most notably NorthwesTel, which is the primary service provider in the Yukon, the Northwest Territories and Nunavut. In June 2024, a consortium of Indigenous communities in Yukon, the Northwest Territories and Nunavut known as Sixty North Unity said it intends to purchase NorthwesTel from Bell Canada for \$1 billion. The proposed transaction would make NorthwesTel the largest Indigenous-owned telecommunications company in the world. The consortium has committed to doubling internet speeds for fibre customers, meeting high speed standards for 97 per cent of homes in the Yukon and Northwest Territories, investing in new fibre projects to add resiliency to wildfires and offering satellite service to communities in Nunavut (Bell Canada, 2024).

A satellite-based competitor, Qiniq, is also active in Nunavut and Yellowknife. The business case for these firms is economically challenging and, absent subsidies — implicit or explicit — it is unlikely that comparable levels of service can be provided at rates similar to those in the south.

In recent years, some large internet service providers have expanded support for Indigenous communities. For example, TELUS publishes an annual report on Indigenous reconciliation and connectivity with specific targets and timelines (TELUS, 2023). Rogers released in 2022 a Truth and Reconciliation Commitment Statement (Rogers, 2022b) and is a member of the Canadian Council for Aboriginal Business' Progressive Aboriginal Relations program.

The CRTC has a major proceeding underway to examine and improve services in the North. It held public hearings in Whitehorse in April 2023 (CRTC, 2023b). It is particularly noteworthy (and praiseworthy) that the CRTC has explicitly included reconciliation as a regulatory objective in the proceeding, stating that "Reconciliation is one of the Government of Canada's and the CRTC's commitments to renewing the relationship with Indigenous Peoples, based on the recognition of rights, respect, co-operation and partnership" (p. 4).

CRTC consultations on services in the Far North resulted in the CRTC requiring NorthwTel to eliminate a \$20 monthly surcharge for customers who do not purchase its home phone service. Long-term solutions will almost certainly require government involvement in a number of possible forms (e.g., capital investment in facilities, direct subsidies to operators, end-user subsidies, etc.), some of which are beyond the CRTC's regulatory ambit.

Satellite technology is an area that is worthy of more attention. Geostationary satellites (GEOs) have long been used to provide telecommunications service in Canada's North. For example, all of Nunavut's telecommunications services are currently provided through a mix of satellite services because there are no fibre connections to the territory. In the case of geostationary satellites, a service provider leases satellite capacity from an operator and connects it to an Earth station in a community. Broadband and other telecommunications services are distributed through the community on a wired or wireless basis by a local provider.

More recently, we have seen the development and deployment of low Earth orbit systems, commonly referred to as LEOs. These satellites operate at a much lower altitude than GEOs, at a height of 250 to 2,000 kilometres. The proximity of these satellites to the Earth's surface is key as it reduces latency (the amount of time it takes for a signal to travel between the sender and receiver, usually measured in milliseconds),⁷ which is the key differentiator between fibre- and satellite-delivered high-speed internet services. The lower latency of LEOs makes satellite internet a comparably fast alternative to fibre, particularly in remote areas, and governments are increasingly recognizing the role that LEOs can play in bridging the digital divide.⁸

There is, however, a strong bias in favour of funding fibre-based broadband projects. This is justified in part by the almost unlimited capacity of fibre-based systems and trust in a more established, well-understood technology. Internet speeds with LEOs can be affected by weather, obstacles and use, while fibre is not. But fibre is not necessarily well suited to serving remote areas like the Canadian North. To illustrate, there are several proposals for extending an undersea fibre to Iqaluit, the capital of Nunavut, but there are more than 20 other satellite-dependent communities in Nunavut that are unlikely to be connected by fibre. One plan to bring fibre from Newfoundland was estimated to cost at least \$200 million (Tranter, 2023). There are also concerns about the robustness of fibre-based facilities in such remote areas, as demonstrated by the many network outages experienced by people in Yukon and the Northwest Territories, both of which are served by fibre-based facilities. Wildfires, for example, have disrupted internet access in recent years (Elliot, 2024). Greater support for an integrated approach utilizing the relative strengths of each technology, and an assessment of the relative costs by region, is worthy of consideration and could help to overcome the digital divide more quickly in Canada's remote areas.

⁷ Geostationary satellites are located approximately 36,000 kilometres from the Earth, so the latency is about 120 milliseconds in each direction. Typical fibre latency, by comparison, is around 10 to 15 milliseconds. LEOs' latency is comparable to that of fibre-based systems.

⁸ The federal government, along with Quebec and Ontario, has invested in Telesat's Lightspeed initiative. Several provinces have adopted programs to subsidize the upfront equipment costs for Elon Musk's Starlink service. The federal government is also supporting faster internet speeds in Nunavut through Qiniq.

Expand discounted internet plans

To put it simply, there is insufficient financial support for low-income Canadian households to help them access high-speed broadband services. More must be done at all levels of government to ensure connectivity. The challenge of addressing affordability will not be met through existing measures such as the federal government's Connecting Families initiative or other measures introduced voluntarily by service providers.

Nor will the challenge of affordability for disadvantaged groups be met by providing the industry regulator, the CRTC, with additional policy guidance to focus on the issue. The CRTC already has affordability as part of its statutory mandate and will continue to use its authority as an economic regulator to address affordability. This can include measures to enhance competition in the sector or to prescribe wholesale rates for broadband service in particular circumstances as it has done for broadband rates in northern areas served by NorthwTel, where the CRTC determined that there was insufficient competition to protect consumers.

However, regulatory measures adopted by the CRTC are designed to serve the broader public interest and must necessarily consider a wide range of issues including network quality, reliability, security, robustness and continued investment in the infrastructure. While the CRTC could develop a subsidy program to address affordability for disadvantaged groups, it would require a significant financial commitment from the government, as is the case in the United States. Otherwise, the CRTC is not particularly well suited to address such a broad societal issue that better fits within the mandates of other departments, and agencies across multiple levels of government. That is not to say the CRTC cannot do more to address affordability. It can and should do so, but on its own and without specific funding, it cannot do enough.

As Canada considers how best to support affordable access to the internet, it is worth looking south of the border. In late 2021, the U.S. *Infrastructure Investment and Jobs Act* became law. It provided US\$14.2 billion to modify and extend the Emergency Broadband Benefit Program to a broadband affordability program called the Affordable Connectivity Program (ACP). Within 12 months, the Federal Communications Commission had opened the application window for an ACP pilot program that covered more than 20 million households (Federal Communications Commission, 2023). Under the ACP, eligible families could receive a benefit of up to US\$30 per month applied to the cost of their internet service. ACP-eligible households who live on Tribal lands were eligible for a benefit of up to US\$75 per month. Eligible households could also receive a one-time discount of up to US\$100 to purchase a laptop, desktop computer or tablet from participating providers. Moreover, the eligibility criteria were broad. Individuals were automatically eligible if anyone in the household qualified for government assistance programs like Medicaid, the Supplemental Nutritional Assistance Program, or SNAP (formerly referred to as food stamps), federal housing assistance, among others, or if they were below a defined household income level.⁹

⁹ About US\$60,000 a year for a family of four or US\$29,000 a year for an individual.

At the time of writing, the ACP was slated to wind down in May 2024 due to a lack of support in Congress for additional funding. Reviews of the program were mixed because it was difficult to show how many households would have lost access to internet services in its absence. One household might have cut their internet subscription, while another may have cut back on food in the face of an equivalent affordability challenge. There were also around 5 per cent of unconnected households that had failed to take up the service. Speculation as to the reasons why include lack of awareness; a complex enrolment process; lack of digital literacy; cost of a computer; insufficient subsidy; and access to an alternative method of internet access (Fruits & Stout, 2023).

Other jurisdictions provide internet subsidies in different ways. The state of South Australia, for example, provides free internet to eligible families with school-aged children (Department of Education, n.d.). New Zealand Aotearoa provides one-time grants to eligible households and communities in the most remote areas where broadband is not currently available to go toward installation costs of a suitable broadband solution (Crown Infrastructure Partners, n.d.).

In Canada, there are other examples of providing low-income households with services at prices that are geared to income, for example community housing, which is provided by non-profit organizations or governments. It is surprising and somewhat ironic that Canada, which takes pride in its superior social safety net, has not found a solution to address the affordability and adoption of high-speed broadband.

There is an opportunity to learn from the experience of other countries and develop an approach that is both more targeted at those in financial need and more attractive and accessible to those who do not currently have internet access. A critical first step is for the federal government to commit to providing the necessary funding — possibly drawn from the proceeds of spectrum auctions — to overhaul existing support programs.

ISED and ESDC should also be asked to co-develop a program that provides a benefit to low-income households to defray monthly internet costs. Eligibility should be expanded beyond the families and seniors covered through the Connecting Families program to include the one in five single working-age adults living in poverty (Community Food Centres Canada, 2023). Households in areas with higher costs, such as northern and remote regions, could receive higher subsidies.

The program design should make it easy for households to receive the benefit. For example, ISED, ESDC and the Canada Revenue Agency could co-ordinate their efforts to define eligibility requirements and automate the process to the maximum extent possible, recognizing that low-income households and other marginalized groups are less likely to be aware of government subsidies or to apply for them. Provincial and territorial income assistance programs could complement federal efforts with programs to close gaps. For example, research shows that 10 to 12 per cent of Canadians do not file a tax return and therefore do not receive benefits for which they are eligible (Robson & Schwartz, 2020).

It would also be worth exploring additional complementary programming at all levels of government to increase the uptake of home internet services, such as subsidized computer purchases, expanded library access with staff that can provide support, and one-time grants for low-income remote households to install the equipment needed for satellite-based internet.

Finally, as recommended by the Office of the Auditor General (2023), the federal government should collect and analyze data, including consideration of household income, to measure progress against the affordability objective of its connectivity strategy — in addition to its goal of expanding adequate internet infrastructure to 98 per cent of households by 2026 and to 100 per cent by 2030.

CONCLUSION

Ensuring that all Canadian homes and businesses have access to quality high-speed broadband services should remain a first-order priority. However, we can no longer measure progress on the digital divide solely through the availability of high-speed internet to all Canadians. We need to consider the magnitude of societal benefits associated with community access, and the ability of low-income households and northern and Indigenous communities to access high-speed internet.

Canada prides itself in its superior social safety net, but still has not found a solution to addressing the affordability and adoption challenges of providing high-speed broadband internet access to low-income households and northern and Indigenous communities. Improving high-speed access in Indigenous and northern communities and providing an improved financial benefit to low-income households should be the key priorities in the government's efforts to conquer the next frontier of the digital divide.

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RURAL B.C. CONNECTIVITY BENEFITS STUDY

PREPARED FOR MINISTRY OF CITIZENS' SERVICES
BY BC STATS

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Cover picture: Slocan Lake - site of an internet transport project bringing 125km of fibre to the Kootenay region. The project is partly funded by the Province and led by Columbia Basin Broadband Corporation.
Photo credit: Columbia Basin Broadband Trust

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EXECUTIVE SUMMARY

Since 2017, the B.C. government has invested \$584 million into expanding high-speed internet and cellular services in the province. This funding has facilitated the expansion of high-speed internet services to rural areas in B.C., providing some communities with internet access for the first time.

The introduction of high-speed internet services can be transformational for rural communities. While qualitative impacts on connectivity benefits are well understood, there are limited academic studies available that look at the economic impacts of new services, specifically in rural areas.

To better understand this, BC Stats developed a model to estimate the short- and long-term economic impacts of high-speed internet¹ funding in rural British Columbia.

The Rural B.C. Connectivity Benefits Study is the final installment in a five-part series examining the economic impact of provincial funding for connectivity projects in rural areas. This study examines the economic impact of provincial spending on connectivity expansion in rural B.C. using the Statistics Canada definition of a rural area – an area with less than 1,000 people and a population density of less than 400 persons per square kilometre for the analysis.² Previous studies focused on defined regions of the province.

¹ Projects selected for the study are partly funded by the Province, occur in the defined rural area, and deliver speeds of a minimum 50 megabits per second download and 10 megabits per second upload (50/10 Mbps).

² Statistics Canada: <https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=113331&CVD=113332&CLV=0&MLV=2&D=1&adm=0&dis=0>

The results of this province-wide study align with those of previous reports focused on specific regions; funding to support the expansion of high-speed internet to under-served rural areas is expected to positively impact B.C.'s Gross Domestic Product (GDP) in the short- and long-term. A breakdown of the investment and economic benefits of high-speed internet expansion for the defined rural area of B.C. is as follows:

- The Province partly funded 132 connectivity projects in rural areas to deliver high-speed internet services to under-served communities in B.C. The Province's total investment for these projects was **\$289.4 million**, which will benefit over **73,000³ households** in rural British Columbia when projects are complete.
- The **\$289.4 million** in provincial funding leveraged approximately **\$808.5 million** from other sources, which equals **\$1.1 billion** in total funding for broadband internet projects in rural B.C.
- Leveraged funding is from private sector internet service providers who build and operate the infrastructure, as well as public sector organizations, including the federal government. This equates to a ratio of **\$1** of provincial funds, to **\$3.79** of total private and public sector investment leveraged to support rural connectivity expansion.

- Short-term economic benefits (defined here as benefits accrued during the build phase of the infrastructure) are summarized as follows:
 - **\$223.7 million** increase in GDP.
 - **1,820 jobs.**
 - **\$66 million** in provincial tax revenue.
- Long-term impact (defined here as increased GDP attributed to enhanced productivity from improved access to high-speed internet services) is estimated at **\$2.3 billion** in increased GDP, calculated to 2045.
- In total, it is estimated the initial provincial investment of **\$289.4 million** in connectivity in rural B.C. will generate **\$2.5 billion** in short- and long-term economic benefits to the province. This translates into:
 - **8.6 times** the initial provincial investment; and
 - a **\$13,900 benefit per connected person** for newly subscribed households calculated to 2045.

³ Estimated households benefitting is calculated as 95 per cent of households served by provincially funded high-speed internet projects in the study area. This reflects the estimated number that will subscribe to the new services.

FIGURE 1: SUMMARY OF ECONOMIC BENEFITS FOR RURAL B.C.

The initial provincial investment of \$289.4 million into connectivity projects in rural B.C. is generating/will generate significant short- and long-term economic benefits for rural areas and the province.

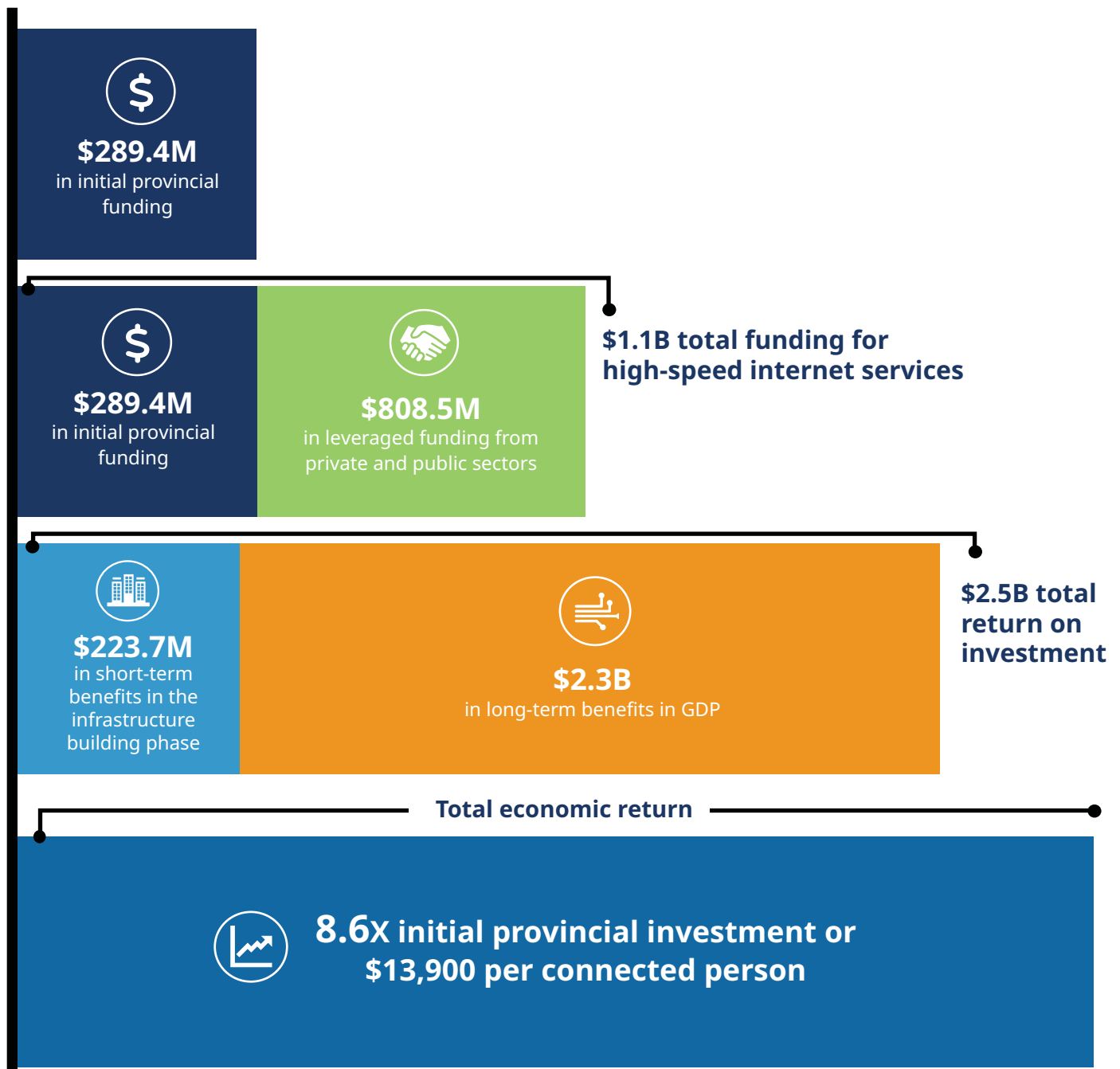
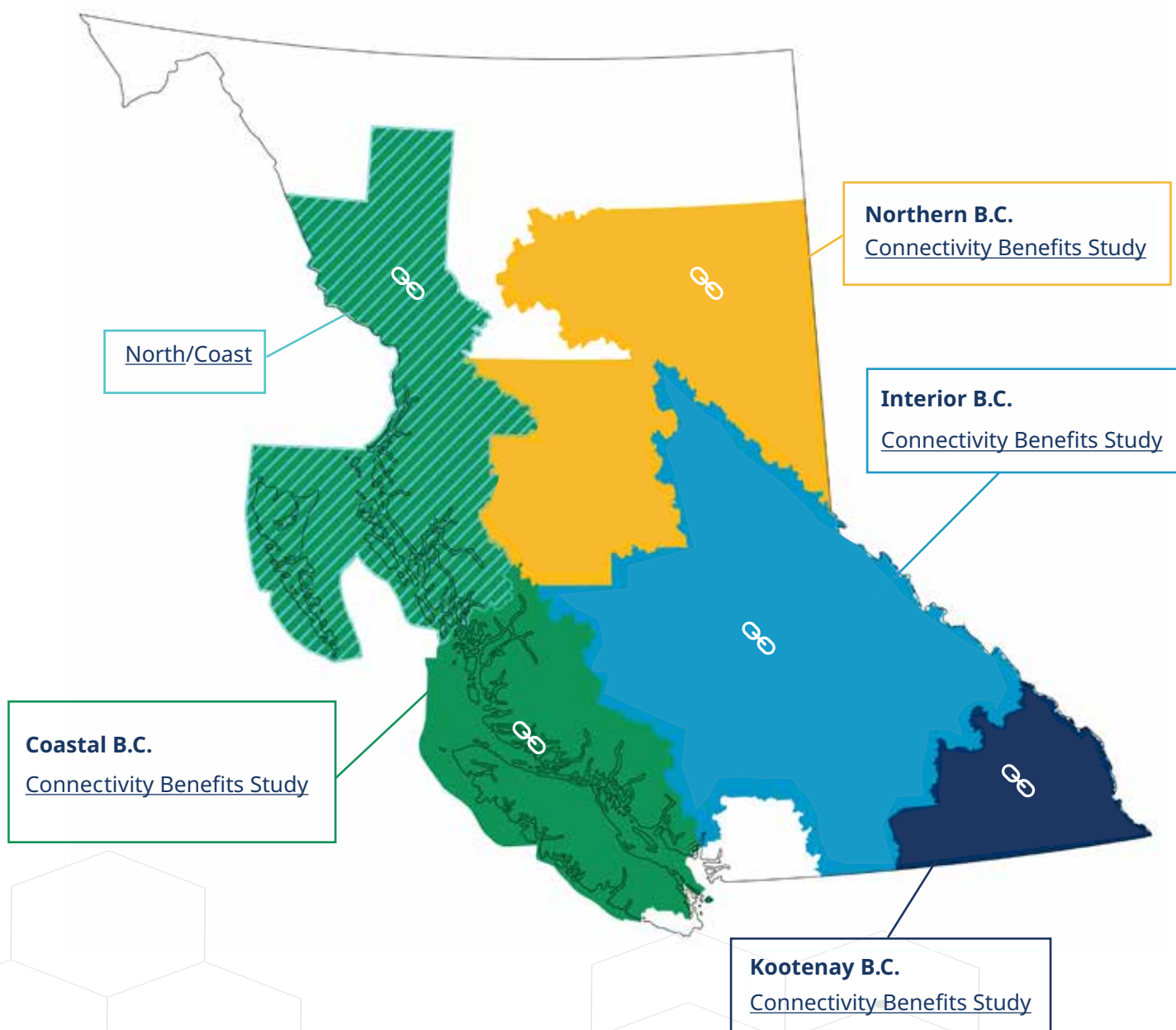


FIGURE 2: MAP OF PREVIOUS STUDY AREAS

This report is the fifth and final in a series of connectivity benefit studies for rural B.C. Previous studies examined the economic impact of connectivity investment in four regions of the province. Study areas are shown in the map below with links to the previous studies. Note: Northern and Coastal B.C. Connectivity Benefits Studies have an overlapping study area on the north coast.



Click on study areas or on the links below to view the reports





BACKGROUND

Access to high-speed internet is vital in today's modern world, especially for rural and remote communities. Connectivity plays a foundational role in shaping the economic well-being and resiliency of rural communities in British Columbia, supporting individuals to access services, seek employment opportunities and start businesses regardless of their geographic location.

High-speed internet services can be transformative for rural areas. Connectivity supports thriving communities and the development of diverse local economies, especially crucial for regions facing impacts of industry changes like mill closures or climate-related weather emergencies.

Since 2017, the B.C. government has invested \$584 million into expanding high-speed internet and cellular services in the province. Combine this with federal funding and over \$1 billion has been committed to expand connectivity. This funding supports connecting every household in the province to high-speed internet services by 2027 and expanding cellular service along major highways.

Government funding programs play an important role in expanding internet services to rural areas as they incentivize private sector providers to build in regions where population density alone does not create a business case.

This final report in the series examines the economic impact of provincial funding in rural areas by analyzing projects partly funded by the Province that deliver high-speed internet services within the defined area of study. High-speed internet projects are those that deliver internet speeds meeting or exceeding the federal universal service objective of 50 megabits per second download and 10 megabits per second upload.

The study is not a summary of previous reports, but rather an analysis of the total economic impact of connectivity investment in rural B.C. using current project information and a methodology that allows for a granular analysis of rural benefits.

The report also contains case studies from people talking about the benefits of connectivity in their community in their own words.



Sea to Sky Highway

National universal service objective

In Canada, telecommunications are federally regulated by the Canada Radio-television Commission (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 broadband internet services on both fixed and mobile wireless networks.

To measure the achievement of this objective, the CRTC established several criteria, including that Canadian residential and business fixed broadband internet service subscribers should be able to access speeds of at least 50 megabits per second download and 10 megabits per second upload (50/10 Mbps) and be able to subscribe to a service offering with an unlimited data allowance.

Government funding programs support the initial build cost for service providers to expand their services to hard-to-reach areas to meet this CRTC universal service objective. This report measures projects delivering the CRTC minimum speeds of 50/10 Mbps.

Source: [CRTC website](#).

PROFILE OF RURAL BRITISH COLUMBIA

Rural B.C. encompasses expansive, diverse and vibrant regions of the province and is home to a variety of communities, from remote coastal areas, accessible only by plane or boat, to those in the far north. Nearly 18 per cent of British Columbians live in rural B.C., and these communities are a powerful economic driver in the province.⁴

There are over 200 First Nations⁵ (including Modern Treaty Nations) in British Columbia and many reserves or Modern Treaty Nation lands are in rural and remote areas of the province. These Nations are an integral part of the rural B.C. economy.

Although urban areas experience nearly complete coverage of high-speed internet services, some rural areas remain under-served. At time of publication, 76.5 per cent of houses in rural B.C. have access to internet speeds of 50/10 Mbps or higher. When current projects partly funded by the Province are complete, that figure will increase to 91 per cent. Government funding will support connecting the remaining under-served homes to high-speed internet services by 2027.

Connections with broader national and global economies, as well as access to essential services and employment, support rural communities to diversify and flourish. High-speed internet services can make life easier and services more accessible in remote communities.

Rural communities are not a single homogenous group and some face specific challenges, such as severe weather conditions and climate-related weather changes.

It is anticipated rural areas will exhibit varied economic responses to the introduction of high-speed internet services. However, studies highlight a general trend that investing in connectivity infrastructure fosters growth and supports positive economic outcomes. It is anticipated therefore that communities with new or improved high-speed internet services will experience some boost in economic growth.

FIGURE 3: B.C. RURAL POPULATION AND INTERNET ACCESS

	Totals
Rural population	634,232 ⁴
Number of primary residences	261,079 ⁶
Average number of people per primary residence	2.43 ⁶
Per cent of rural households with access to high-speed internet services (Jan. 2024)	76.5% ⁶
Per cent of rural households with B.C. funded projects in progress (Jan. 2024)	14.5% ⁶

⁴ Statistics Canada <https://www12.statcan.gc.ca/census-recensement/2021/as-sa/98-200-x/2021002/98-200-x2021002-eng.cfm>

⁵ Source BC Assembly of First Nations <https://www.bcafn.ca/about-bcafn/vision-mission>

⁶ Analysis by the Connectivity Division, Ministry of Citizens' Services



CONNECTING CHAWATHIL FIRST NATION

East of Vancouver in the Fraser Valley along the Fraser River lies the territory of the Chawathil First Nation.

Despite two major highways and the province's largest urban centre just to the West, Chawathil First Nation was without high-speed internet access until recently. A TELUS fibre project, partly funded with \$2.9 million by the Province, extended services in 2023 to 11 communities between Yale and Ruby Creek, including Chawathil First Nation.

Before internet connectivity, the Chawathil First Nation's geographic region and distance was seen as a challenge for community members to strengthen community ties and access resources.

With recent internet upgrades to their fibre optics, people can better access services and economic opportunities, including working from home.

"Now, I think with resources like this, having internet connectivity, there are no excuses to get something done," said Aaron Pete, Chawathil First Nation elected leader, podcaster, court worker. "We're able to have faster voting, connect our members better, be more transparent with them, and make sure we're acting in their best interest. I'm so proud that Chawathil has access to this resource and that we're able to start to show who we are."

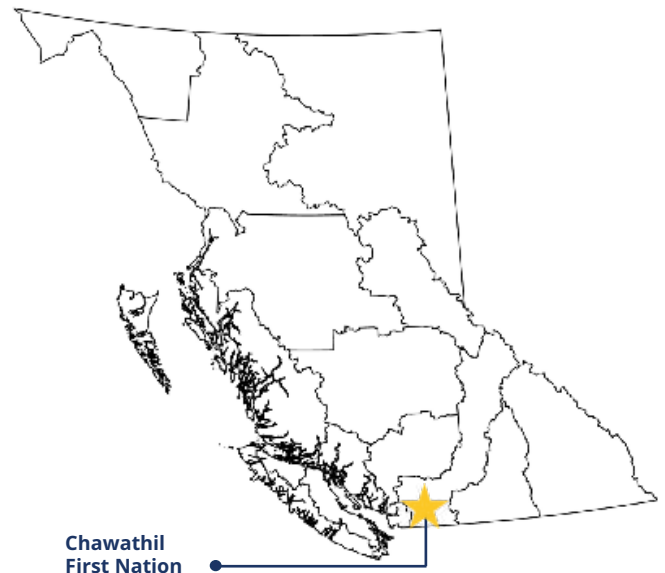
See Aaron Pete discuss connectivity in [Connecting Chawathil First Nation on YouTube](#).



Chawathil First Nation Band Office
Picture credit: Kingtide Films



Connecting Chawathil First Nation
Scan the QR code to [watch on YouTube](#)





METHODOLOGY

This study examines the economic impact of high-speed internet projects partly funded by the Province in the defined area of study in rural British Columbia. The report's analysis is based on 132 projects that deliver, or will deliver, high-speed internet services in the defined rural area of study. These projects include both transport and last-mile internet projects,⁷ designed to meet or exceed the universal service objective speeds of 50/10 Mbps speeds. This analysis excludes certain provincially funded projects implemented during the COVID-19 pandemic designed to give relief to communities by improving internet service, but potentially not delivering speeds meeting the CRTC's universal service objective of 50/10 Mbps. Additionally, the report does not include cellular or connectivity planning project funding.

The 132 projects were selected for provincial funding either through the Connecting British Columbia program, administered by Northern Development Initiative Trust, or the Connecting Communities BC program, administered by the Ministry of Citizens' Services. Most projects also receive funding from the federal government, as well as from other sources such as the private sector, community, First Nation, or local government investment.

Analysis of the projects by the Connectivity Division in the Ministry of Citizens' Services estimates the specific portion of the households benefitting in the rural area, as per the Statistics Canada definition. For example, in cases where a last-mile project was primarily in a rural area but extended into a more densely populated centre, only the households within the rural area were counted for the long-term impacts of the study. Project construction spending data was used to estimate economic impacts of the work in the short term during the years that projects are built.

Long-term impacts were estimated starting at project completion and extending to 2045. Projects in the study were scheduled to begin construction between 2018 and 2025, and complete by 2027. At time of report publication, 46 of these projects are complete, with the remainder in progress.

The analysis of economic impacts used project spending data, local economic data, and existing empirical relationships between spending and economic impact, to establish measurement frameworks and estimates of short-and long-term impacts.⁸

It is important to note both transport and last-mile projects are required to connect communities to high-speed internet services. Transport lines (usually fibre) bring high-speed internet capacity to an area, and last-mile projects connect that capacity to homes. In this analysis, both projects are measured in terms of investment and short-term impacts of the builds, but the long-term productivity impact is based on households connected from last-mile projects only and the estimated number that subscribe to new or upgraded internet services.

Transport projects bring fibre from major Internet Exchange Points in large cities, like Vancouver, and are essential to get new services to remote communities. These projects can be costly as they may be complex and cover large geographical areas. While not reflected in the long-term economic benefits in this report, transport projects create the internet network we rely on and investment in these services is necessary for resiliency and expanding services to rural communities. New transport projects also improve service to existing infrastructure, so the number of households benefitting from new services is likely higher than reflected in this study.

⁷ All projects in the analysis occurred in the study area. Transport (or backbone) 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, Calgary or Seattle, to community points.

Last-mile infrastructure connects from the service provider's community point of presence to households. 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.

⁸ Project spending data includes the commodities and services that will be purchased to complete the project in each year of construction.

Local economic data includes labour force, population, tax, immigration, business and other available data. Existing empirical relationships are derived from the BC Input Output Model (BCIOM) and the supply use tables from Statistics Canada.

Examples of last-mile and transport projects

In recent years, B.C. has made progress extending its backbone (transport) network through a combination of government funding programs and private investment. Examples of backbone projects partly funded by the Province include the Connected Coast project, which is under construction, Tahltan Nation Development Corporation's transport fibre project in the north, which is also under construction, and completed projects such as Columbia Basin Broadband Corporation's Slocan Valley Fibre project. All three projects are administered by Northern Development Initiative Trust. These transport projects provide pathways for high-speed internet from a central Internet Exchange Point to carrier networks, thereby

expanding services to communities. Additionally, B.C. funding programs have supported many last-mile projects to bring internet to the home. For instance, projects led by Kaslo InfoNet Society will serve six communities around northern Kootenay Lake, and a TELUS project in the Sheridan Lake area, completed in May 2024, provides high-speed internet to more than 390 households. These projects are just a few of the 208 projects 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](#).



Construction of the Connected Coast network
Photo credit: Connected Coast

CASE STUDY

CONNECTING GRANISLE

Granisle is a village in the northern interior of B.C. on the shores of Babine Lake. The community was incorporated in the 1970s and grew to house workers from the nearby copper mine and their families. When the mine closed in 1992, the population rapidly shrank from 2,500 to under 500 people. The village then went through a period of reinvention and economic diversification to help attract people back to the community. Today, fishing, boating, snowmobiling and hiking make tourism the village's biggest industry.

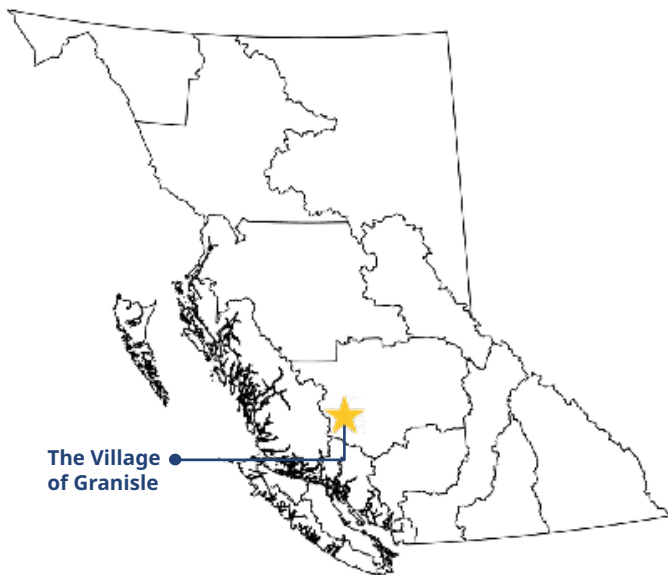
To support community members in 2015, the village sought funding from the Connecting British Columbia program to build some initial internet infrastructure.

Once internet connectivity was established, the village further enhanced the community's access to resources and medical care. The community could now support a virtual pharmacy, making it easier for community members to access prescriptions. *"I was struck by the fact that people here, who are mainly seniors, have to drive two hours to fill an amoxicillin prescription,"* said Shadi Al-Hawari, pharmacist and entrepreneur.

"I thought it would be a good idea to start up a tele-pharmacy. Now, the pharmacy is linked to a central pharmacy through a Cisco video-audio unit," adds Al-Hawari. *"Without connectivity, we can't operate. It's not just about filling prescriptions. It's actually about providing that care. Connectivity means more businesses, more taxes paid, and more growth and employment."* The pharmacy has been operational since 2017.

"It [connectivity] is not the piece that drives the economy but is a platform on which you build your economy," added Brenda Anderson, community member.

Now the Village of Granisle will soon install high-speed fibre optic cable to nearly 300 households which will deliver speeds of over 50/10 Mbps. This project is partly funded by the B.C and federal governments and will ensure the residents of Granisle have access to high-speed internet for many years to come. See the people in Granisle talk about their experiences with connectivity in [Connecting Granisle on YouTube](#).



Village of Granisle
Photo credit: Village of Granisle



Connecting the Village of Granisle
Scan the QR code to [watch on YouTube](#)

ASSESSING SHORT-TERM IMPACTS

High-speed internet expansion projects, like any large infrastructure projects, stimulate the local economy in the short term by generating demand for products and services during the construction phase.

BC Stats collaborated with the Connectivity Division in the Ministry of Citizens' Services to identify 132 high-speed internet projects throughout rural B.C. to use for the analysis. The projects were selected based on criteria that they:

- receive provincial funding between 2017 and 2024;
- deliver, or support delivery, of high-speed internet services of a minimum of 50/10 Mbps; and
- take place in the defined rural area of the study.

BC Stats used the British Columbia Input-Output Model (BCIOM – see Appendix B) to estimate short-term impacts for rural economies and the province.

The BCIOM serves as a tool for generating regional economic impacts stemming from various projects and economic events. It is based on Statistics Canada supply use tables⁹ and is a macroeconomic modeling tool that allows economists to estimate the impacts of increased industry spending on the economy in the region, and province in the short term. The BCIOM has been used over the years to assess the economic impact of both public and private investments, including a range of initiatives such as hydroelectric infrastructure, ports, transportation projects, and residential construction projects.

The model estimates these impacts at three levels: direct, indirect, and induced as detailed below:

- **Direct impacts** are related to the direct spending on the project. These impacts occur because of purchasing material inputs for the project and the payment of wages to employees building the infrastructure or doing the engineering design if directly employed by the company.
- **Indirect impacts** include money that is spent by contractors on wages and the goods they purchase. For example, this would include an external firm if contracted to design or build a piece of infrastructure.
- **Induced impacts** come from the spending of the employees building the project in the local economy. For example, if a construction employee takes a break and buys something from a local establishment, the money spent is an induced impact from the project.

The model also generates estimates of tax revenues associated with a change in demand for one or more commodities, or a change in the output of an industry. These tax revenue estimates include personal and corporate income taxes, as well as taxes on commodities.

⁹ More information about Statistics Canada supply use tables: <https://www150.statcan.gc.ca/n1/pub/13-607-x/2016001/1067-eng.htm>



ASSESSING LONG-TERM IMPACTS

New or improved high-speed internet services can foster long-term economic growth by opening up new opportunities for local businesses, workers and residents. This growth in productivity can continue for years beyond the completion of the construction phase and availability of internet services. To describe this impact, BC Stats developed a model based on empirical relationships established in literature to estimate the long-term economic impacts of the projects in scope of the study.

Four different academic studies were analyzed to inform the impact on GDP from increased high-speed internet availability (listed in Appendix A). GDP is expected to increase incrementally over time (see Figure 4) as increased connectivity leads to increased productivity.

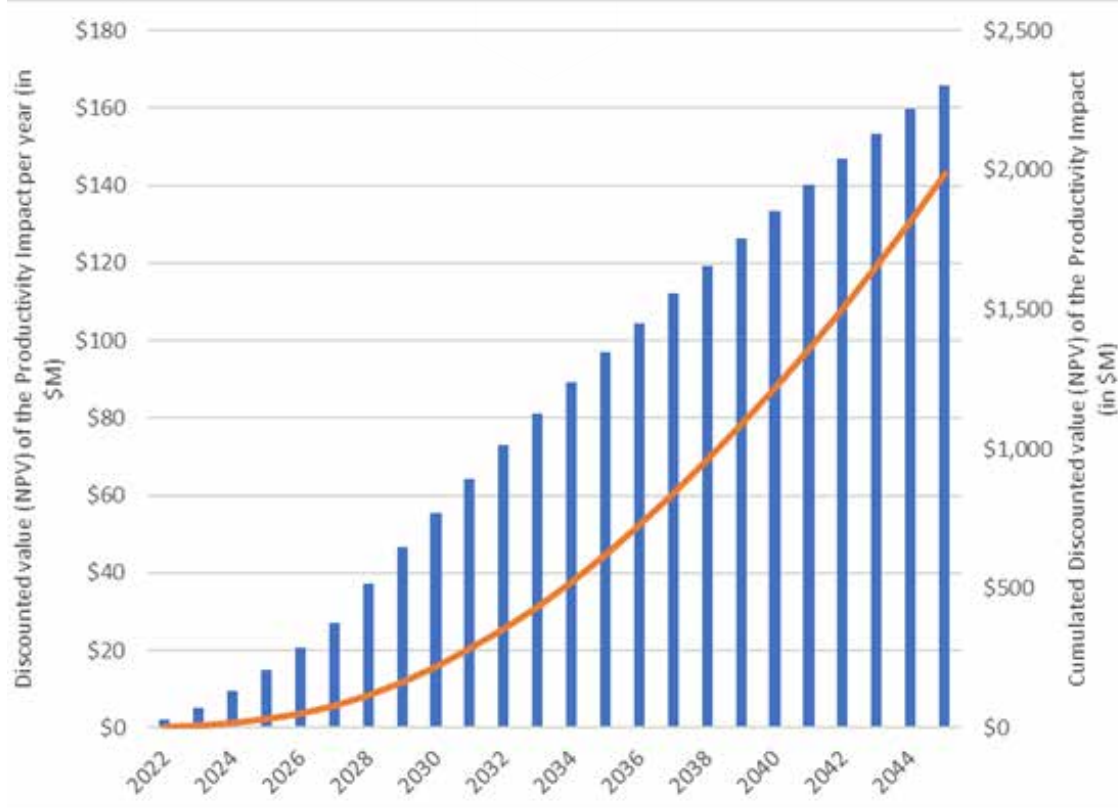
The fundamental premise underlying this analysis is that increased access to high-speed internet supports individuals to boost productivity, thereby stimulating economic growth. This effect is particularly significant in areas where internet access was previously unavailable, but it can also be observed when internet speeds are increased.

An increase in productivity can occur in multiple ways. It can result from reduced time commuting to work when telework is an option. Transitioning from dial-up to high-speed internet, for example, can enable professionals to work faster and more efficiently. High-speed internet can also pave the way for new business or employment opportunities with new access to national and global markets.

Based on the literature and available data, BC Stats estimates:

- An increase of 10 percentage points in the number of broadband subscriptions would contribute 1.23 per cent to GDP per capita growth.¹⁰ This formula is then applied to the increase in households with access to high-speed internet, resulting from projects funded by the Province.
- The calculation is done in terms of net present value of resultant GDP Growth.¹¹ For this approach, a social discount rate¹² of three per cent was used based on Government of Canada data.¹³ The social discount is used to adjust future costs and benefits to values in current terms.

FIGURE 4: PRODUCTIVITY IMPACT FROM THE INCREASE IN ACCESS TO HIGH-SPEED INTERNET SERVICES



The Ministry of Citizen Services' Connectivity Division estimates that, on average, 95 per cent of households benefitting from the projects would eventually subscribe to the new service once available. GDP data produced by Statistics Canada for sub-provincial geographies¹⁴ was not detailed enough to use in this analysis, but suggests that GDP growth in B.C. is relatively in line with population share.

Figure 4 shows the anticipated productivity impact of high-speed internet services over a period from 2022 to 2045. This period of time allows for the calculation of impact after the completion of most projects.

In addition to heightened productivity, increased access to high-speed internet is expected to have social and environmental benefits. These benefits include increased access to healthcare and other services, ability to connect with loved ones, and improved safety and resiliency for communities. Environmental effects might include decreased emissions resulting from reduced travel due to the ability to work and conduct meetings from home. While these factors may indirectly impact productivity, they are not directly measured in this report.

¹⁰ This estimate is developed by BC Stats based on the studies listed in Appendix A.

¹¹ Net present value is a calculation of the value of future dollars in the current year. This is derived by applying a social discount rate to future productivity increases to reflect the value of those increases as a current value.

¹² A social discount rate is a mathematical calculation used to adjust future economic benefit for consumer preference for spending that produces outputs in the present rather than the future.

¹³ Government of Canada. <https://www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/requirements-developing-managing-reviewing-regulations/guidelines-tools/cost-benefit-analysis-guide-regulatory-proposals.html>

¹⁴ Statistics Canada. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610046801>



Kaslo. The Province has partly funded four projects led by Kaslo InfoNet Society to bring high-speed internet to Kaslo and the surrounding area



RESULTS

The study concludes that from an initial provincial investment of **\$289.4 million**, a total economic benefit to GDP calculated to 2045 is estimated at **\$2.5 billion**. This initial provincial investment is thus multiplied **8.6 times** in short- and long-term returns for the rural economy and for B.C.

A breakdown of the investment and economic benefits of high-speed internet expansion for the province is as follows:

- The **\$289.4 million** in provincial funding leveraged approximately **\$808.5 million** from other sources, which totals **\$1.1 billion** for internet projects in rural B.C.
- This leveraged funding is from private sector internet service providers who build and operate the infrastructure, as well as public sector organizations, including the federal government. It equates to a funding ratio of **\$1** of provincial funds, to **\$3.79** of total private and public sector investment leveraged to support rural connectivity expansion.
- The province will experience **\$223.7 million** in increased GDP in the short term from connectivity infrastructure construction between 2017 and 2027. This is from 132 connectivity projects which will benefit over 73,000 households when complete.
- Long-term impacts (defined as increased GDP attributed to enhanced productivity from access to high-speed internet services) are estimated at **\$2.3 billion** in increased GDP, calculated to 2045.
- In total, it is estimated that the initial provincial investment of \$289.4 million in connectivity in rural B.C. will generate **\$2.5 billion** in short- and long-term economic benefits to rural areas and the province.

Short-term economic benefits

As a result of the construction phase of the projects, BC Stats estimates short-term impacts will increase GDP in the province by \$223.7 million. These short-term impacts also increase income earned by workers (labour income), add jobs to the economy, and increase tax revenue both locally and provincially.

The economic impacts are estimated to be:

- **\$223.7 million** increase in GDP
- **\$138 million** increased labour income
- **1,820 new jobs**
- **\$66 million** in provincial tax revenue
- **\$10 million** in municipal and regional district tax revenue

A further breakdown of short-term economic impacts is in Figure 5.

**FIGURE 5:
SHORT-TERM ECONOMIC IMPACTS¹⁵**

	Estimated economic impact in B.C			
	Direct	Indirect	Induced	Total
Business expenditure	\$674M	\$149M	\$80M	\$902M
GDP	\$118.2M	\$67.7M	\$37.8M	\$223.7M
Labour income	\$71.5M	\$45.4M	21.1M	138M
Employment - Full Time Equivalent (FTEs) ¹⁶	780	525	240	1,550
Employment - number of jobs	870	635	315	1,820
Gov't revenues - provincial taxes	\$56.9M	\$5.4M	\$4.0M	\$66.3
Gov't revenues - municipal and regional taxes	\$6.7M	\$1.3M	\$1.6M	\$9.6M

¹⁵ Numbers in the table are rounded.

¹⁶ Full time equivalent (FTE) is a translation of all part-time and seasonal jobs to a full-year, full-time job. The number of jobs above will be total roles that need to be filled, some of which will be part-time or seasonal.



Long-term economic benefits

Long-term economic impacts of new connectivity infrastructure for rural B.C. are estimated to 2045 using methodology outlined. Based on new high-speed internet services being available, BC Stats estimates productivity growth between project completion and 2045 will incrementally result in a **\$2.3 billion** total increase in GDP.

This estimate describes the net present value of the impact on GDP growth in rural B.C. and the province combined. This is **7.86** times the return on initial provincial investment in the long term.

Overall economic benefits

This study shows the Province’s initial connectivity investment will deliver substantial returns for rural regions and B.C.

Over the short- and long-term combined, this return is **\$2.5 billion – 8.6 times** the initial B.C. investment and

a **\$13,900 increase in provincial GDP per connected person** for newly connected households within the study time span.

Some key metrics from the study are outlined in Figure 6.

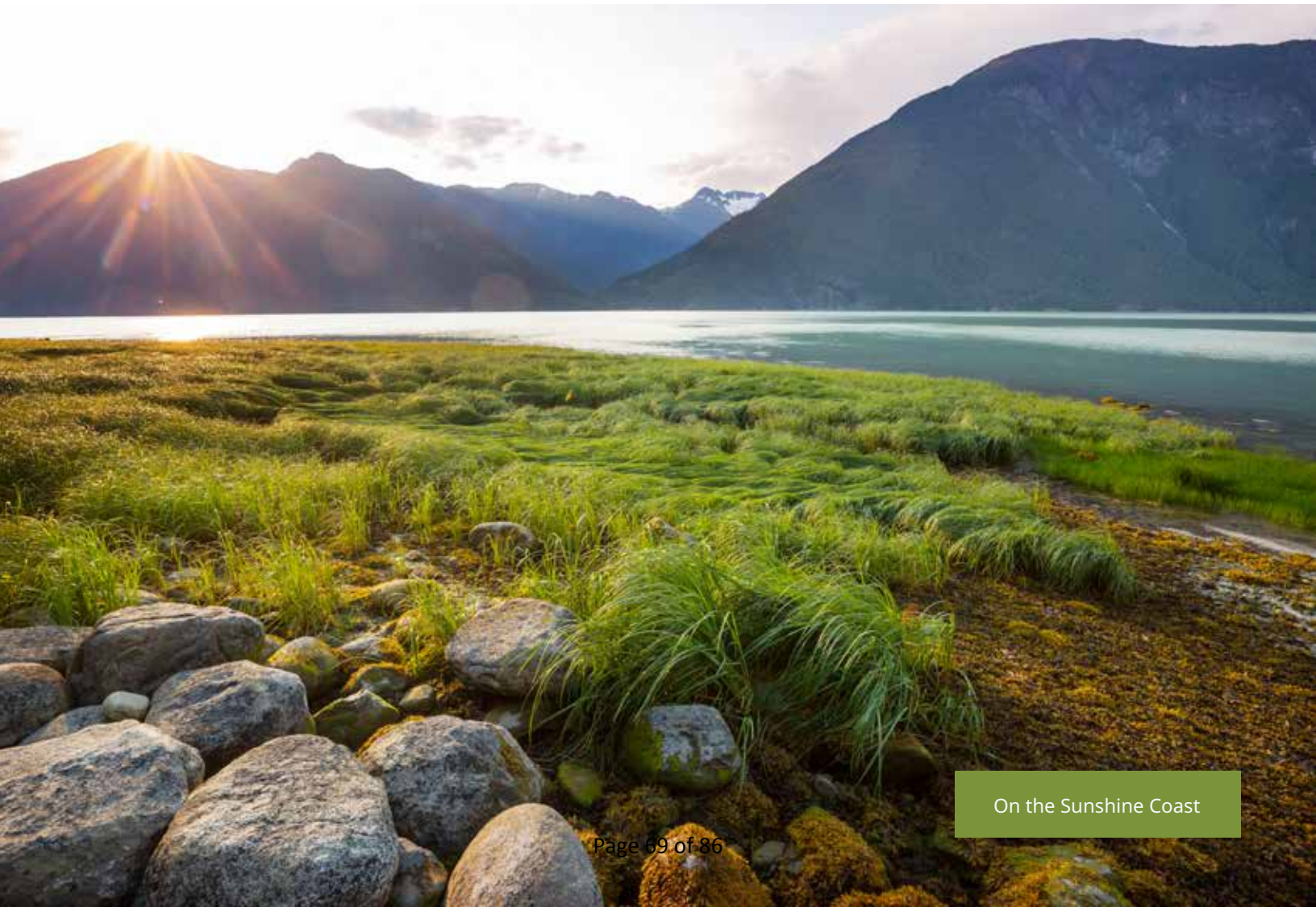
FIGURE 6: BREAKDOWN OF RESULTS

Type	Amount
BC investment (\$million)	289.4
Total investment (including leveraged investment) (\$billion)	1.1
Investment leveraged per dollar of provincial investment	3.79
Total multiplied return on initial investment	8.6
Total rural population (2021)	634,232
Total rural land area (km²)	945,650
Rural population density (per km²)	0.67
Rural private dwellings (per km²)	0.33
Total increase in GDP short-term (\$million)	223.7
Total increase in GDP long-term (\$billion)	2.27
GDP as ratio of B.C. investment short-term	0.77
GDP as ratio of B.C investment long-term	7.86
Total economic benefit from initial investment (\$billion)	2.5
Estimated households that subscribe to the new service	73,000
Economic benefit per newly connected person (\$)	13,900

Assumptions and limitations to the study

The assumptions and limitations behind this analysis include the following:

- Some budget items such as GST are not included in the expenditure data used for the model.
- This analysis is based on an input-output methodology and therefore estimates “gross” contribution to the economy, which does not account for the opportunity cost of employing capital and labour in alternative ways. It is subject to the standard assumptions and limitations applicable to Statistics Canada’s Input-Output multipliers and BC Stats Input-Output model (see Appendix B).
- Given that expenditures are for infrastructure deployment in rural B.C., direct economic contributions are considered to largely benefit the region in the short term. The input-output analysis then allocates indirect and induced impacts in the short term for the whole of the province.
- The number of households benefitting is calculated as 95 percent of estimated households served by new internet services.
- Some data availability limitations also exist, such as lack of GDP data at the sub-provincial level. Therefore, the GDP per capita and the GDP per capita growth rates for the coastal region is assumed to be the same as at the provincial level.



CONCLUSION

This study shows the Province's connectivity investment delivers substantial returns for rural areas and B.C. This return is **8.6 times** the initial provincial investment in the short- and long-term, creating significant economic impacts for local economies and provincial GDP.

The study also finds the return on provincial investment in rural B.C. is in line with results from other studies:

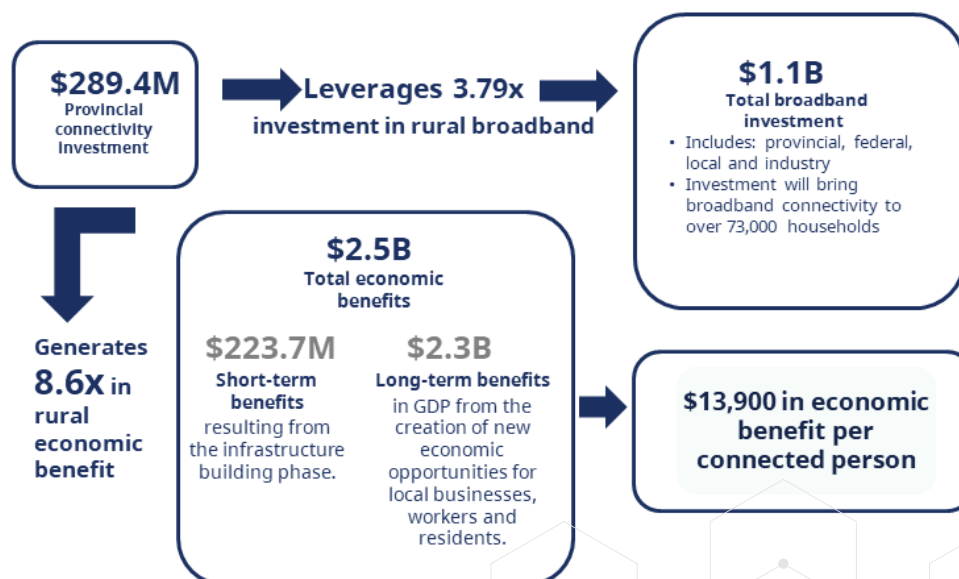
- **B.C.'s investment in high-speed internet leverages considerable federal, private and other investment** — The \$289.4 million in provincial funding, leverages \$808.5 million from other sources, which totals **\$1.1 billion** for internet project expansion in rural B.C. This multiplies every provincial dollar by **3.79**, which generates value for B.C. investment.
- **Results are in line with other studies** — This analysis shows a return of **8.6 times** the initial provincial investment, which demonstrates connectivity investment in rural areas generates a considerable amount of economic return to the community and the province's GDP in the short and long term. Increased economic activity in the short term in the construction phase, plus increased productivity in the long term from the provision of internet services, shows investment

in connectivity supports the growth of rural communities, helps diversify economies, and increases provincial GDP.

- **The power and value of high-speed transport projects** — Fibre transport networks are required to bring high-speed internet services to remote and rural communities across the province from Internet Exchange Points in major cities. Last-mile projects bring this service to homes. While economic modelling in the long term measures estimated benefits to households that receive new internet services from last-mile projects, transport fibre projects are important as they add resiliency to the network, bring fibre and capacity to communities, and improve internet speeds for existing infrastructure already in place. New households served by existing infrastructure, or private sector providers using provincially funded transport projects, would not be captured in this study.

It is worth noting there are many additional benefits to connectivity expansion, including the ability to access services, stay connected to community members and loved ones, and keep updated in an emergency, that are not measured in this study.

FIGURE 7: SUMMARY OF RESULTS



CONNECTING HAIDA GWAII

Haida Gwaii is an archipelago of islands situated off the north Pacific coast. It is the home of the Haida Nation.

The Province has invested over \$5.5 million to support improved connectivity on Haida Gwaii. Last-mile projects will be powered by the new Connected Coast network that is bringing high-speed capacity to the islands from an Internet Exchange Point in Vancouver.

Bringing high-speed internet to Haida Gwaii creates more accessible opportunities for community members to pursue education and careers that were not typically possible in rural areas with slow-speed connectivity.

"With the internet, it's allowed me to start a multitude of businesses and hire local people to help build a new economy that wasn't possible with slow internet", says Nang K'uulas, Patrick Shannon, film director, photographer, and social entrepreneur.

With access to other First Nation communities and the larger Canadian population, the internet has opened doors for personal growth, relationships within and between Nations, and the economy.

"We're able to start moving forward in this modern world in a way that stays true to our values and our integrity, and don't have to compromise that," added Shannon.

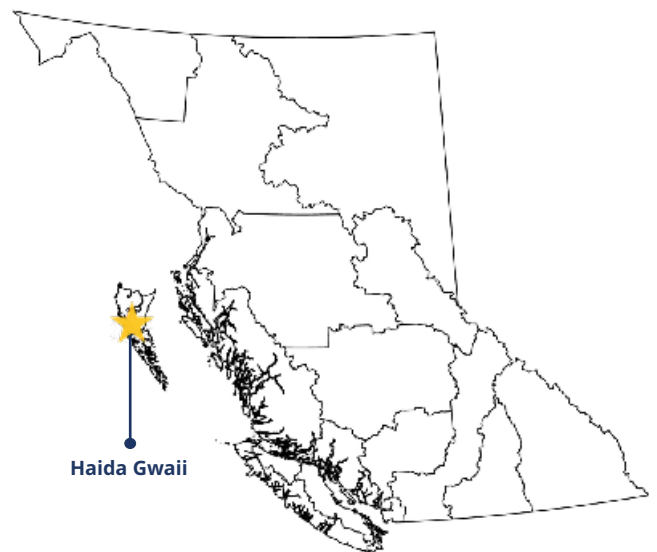
See Patrick Shannon talk about [connectivity in Haida Gwaii on YouTube](#).



Haida Gwaii



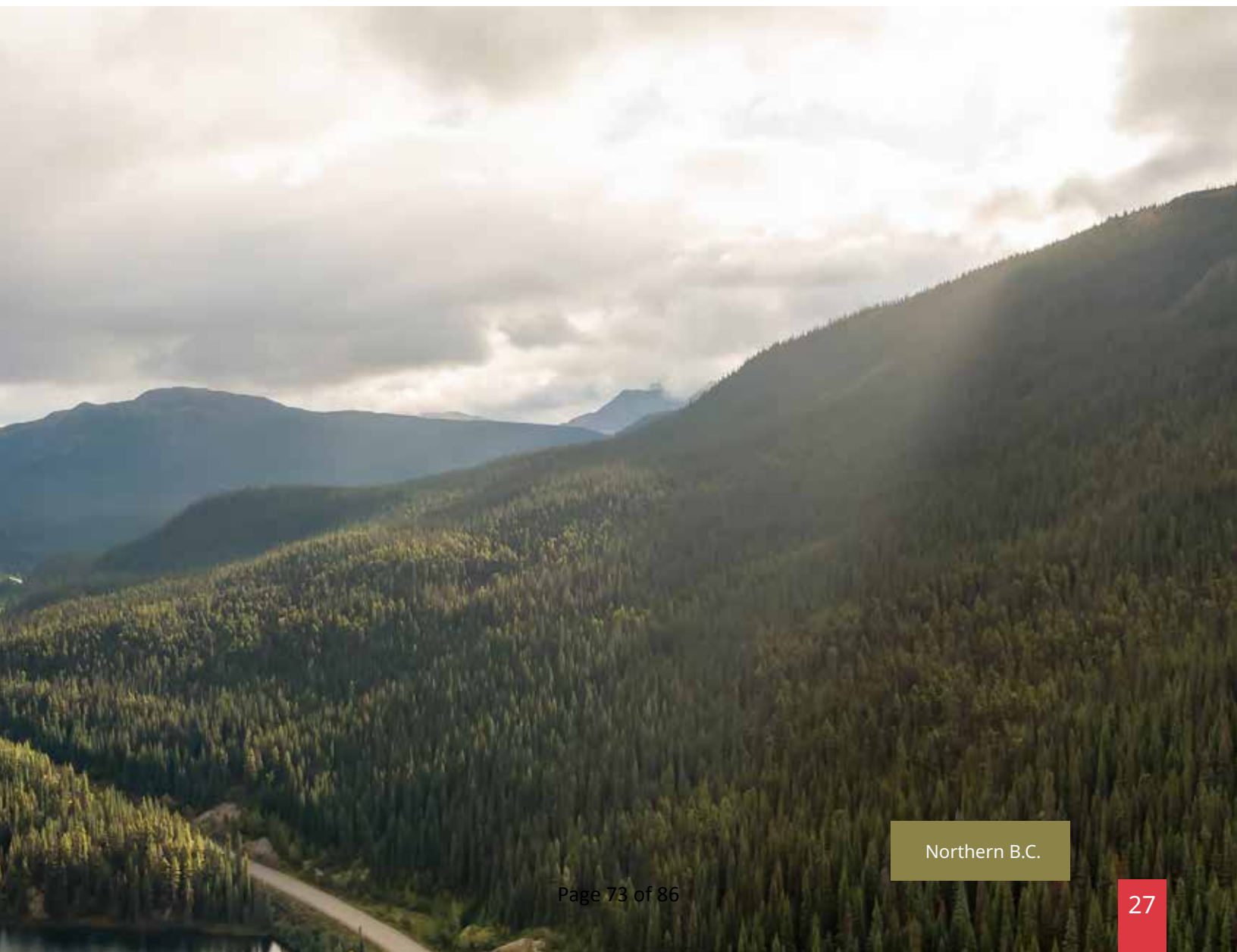
Connecting Haida Gwaii
Scan the QR code or [watch on YouTube](#)



APPENDIX A: ACADEMIC STUDIES

- Ericsson, Arthur D. Little, Chalmers University of Technology. (2013). *Socioeconomic effects of broadband speed*. Retrieved from Arthur Little.
- Katz, R., & Jung, J. (2021). *The economic impact of broadband and digitization through the COVID-19 pandemic*. Geneva: International Telecommunications Union.
- Minges, M. (2016). *Exploring the relationship between broadband and economic growth*. World Development Report 2016.
- Toader, E., Firtescu, B. N., Roman, A., & Anton, S. G. (2018). Impact of information and communication technology infrastructure on economic growth: an empirical Assessment for the EU countries. *Sustainability*, 1-22.





APPENDIX B: BC INPUT-OUTPUT MODEL

Overview of the B.C. Input-Output Model

BC Stats maintains an input-output (IO) model based on the structure employed by Statistics Canada. The IO model is updated annually by BC Stats using the most up-to-date data from Statistics Canada. Starting in 1996, Statistics Canada began releasing updated IO information on an annual basis. The most recent release in December of 2022 was incorporated into the BC Stats IO (BCIOM) in summer 2023. Each report in the series uses the most up to date BCIOM at time of study, which results in slight differences in the model calculations from report to report. The final connectivity benefits study will look again at all areas of the province using the same model and factors to end the series, which will allow for a like-for-like comparison between regions.

The 2019 BCIOM was the first to incorporate data sets with post pandemic data in them. As a result, estimates may be structurally different from previous model iterations. The final report in this series will use the same model base year for all regions to provide outputs that are more accurately comparable.

The BCIOM is a structural model of the B.C. economy. The core of the BCIOM is a set of three tables (supply, use, and final demand) that present the most detailed accounting of the provincial economy available. The tables together detail the supply and disposition of commodities, industries output delineated by commodity composition, and the complete costs of production of B.C. industries. The tables comprise of detailed information obtained from administrative data, and Statistics Canada's surveys of establishments and enterprises. In essence, the supply use tables (SUT) provide a snapshot of the complete economy and all its industrial interconnections at a specific point in time.

SUT are produced at various levels of aggregation: the least detailed set of tables are presented at the "summary level" of aggregation, representing 35 industry groupings and 74 commodity groupings. The most detailed aggregation represents 240 industries and 501 commodities. The detailed-level SUT information is shared with the BC Stats by Statistics Canada, and is the information used in the BCIOM.

Purpose and uses

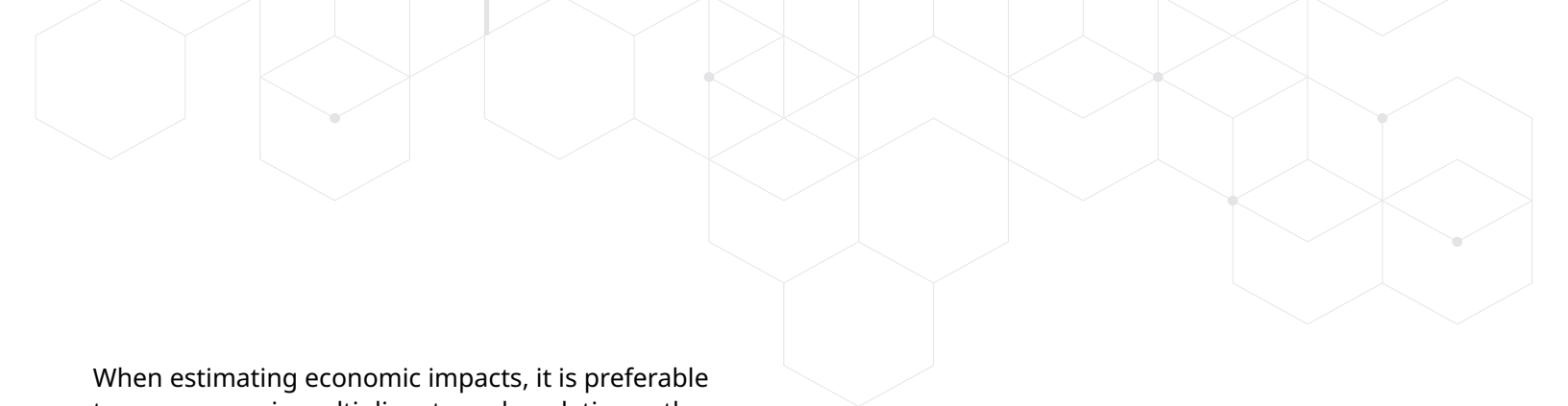
The purpose of a BCIOM is to estimate the total economic impact of a project, or economic shock, by presenting estimates of direct, indirect, and induced impacts associated with the project or shock (meaning any change or departure from the status quo). Based on the observed inter-connection between industries in the economy, the multiplying of demand is traced through these industrial linkages to yield a set of aggregate impacts.

One of the most common uses of the IO model is to simulate the impact of a demand shock on the economy. Any increase in consumption of goods and services will generate direct, indirect, and induced economic production.

Limitations of the Input-Output Model

Although the BCIOM can be a very useful tool in the decision-making process, users should be aware of the limitations of input-output analysis. Some of the limitations that should be taken into consideration when using IO models are:

1. Technical coefficients are assumed to be fixed. That is, the amount of each input necessary to produce one unit of each output is constant. The amount of input purchased by a sector is determined solely by the level of output. No consideration is made to price effects, substitution, changing technology or economies of scale.
2. It is assumed that there are no constraints on resources — supply is infinite and perfectly elastic.
3. It is assumed that all local employment resources are efficiently used and at full capacity, there is no underemployment of resources.
4. IO models are flow models. Stocks are not explicitly represented, which implicitly assumes that goods can be produced without additions to capital stock.
5. The industrial structure and linkages of the represented economy are based on information that lags the current economy — typically a three to four-year time lag in Canada.

A decorative graphic at the top of the page consisting of a grid of hexagons. Some hexagons are white with a thin grey border, while others are filled with a light grey color. Small grey dots are placed at the intersections of the hexagonal grid.

When estimating economic impacts, it is preferable to use economic multipliers to make relative, rather than absolute, comparisons. Economic multiplier analysis is more properly used to determine which of several activities would have the largest economic impact rather than to estimate the absolute level of economic impact for a single activity. Where economic multipliers are used to estimate the impacts of a single activity, the results should be treated as general estimates only, indicating the order of magnitude of the impacts rather than exact levels.



Orca off the coast of Quadra Island



BCStats

BC Stats is the provincial government's leader in statistical and economic research, information and analysis essential for evidence-based decision-making. The goal is to increase overall business intelligence—information decision makers can use.

9410 Stn Prov Govt Victoria, B.C. V8W 9V1

Email: bc.stats@gov.bc.ca

Twitter: @bcstats

Web: www2.gov.bc.ca/gov/content/data/statistics

Back photo: Trees near Cathedral Grove

Dear Terri, Trevor and Committee members,

Thank you for the opportunity to present at the recent BIMC meeting and for hosting us at the luncheon. It was a wonderful to connect, while also taking the time to better understand key priorities, issues, and challenges. I appreciate that you've been incredibly busy responding to wildfire events and hope that this note reaches you during better conditions.

Congratulations on the appointment of Planetnetworks to develop the next version of your connectivity plan. They have already reached out to us and we will support them in their work.

I believe there were no outstanding questions we needed to address, but wanted to be sure you had the additional information sources we spoke to at the meeting, in case they are useful:

Project Information:

Local Governments have direct access to approved project information through the [National Broadband Internet Services Available Map](#) as well as the provincial [Map of Funded Projects](#) available on the connectivity website.

Speed or Map Discrepancies:

In 2021, the provincial Ministry of Citizens' Services, UBCM, and Northern Development Initiative Trust (NDIT) collaboratively launched an independent study to better understand the factors contributing to the difference in internet speeds between data published on the federal government's National Broadband Internet Service Availability Map and some community experiences in B.C.

The study identified possible internet speed discrepancies in some areas and found multiple reasons why a discrepancy might be experienced by community residents. You can find the report summary [here](#).

The program continues to investigate areas where community experience with internet speeds is not aligned with federal data reported from service providers. Communities are encouraged to reach out to the Connectivity team directly at ConnectedCommunities@gov.bc.ca with any questions.

We appreciated being in person and the opportunity to meet you. We are monitoring the fire situation with our Emergency Management and Climate Readiness Ministry colleagues and were happy that NorthwesterTel was able to restore services near Fort Nelson. Our thoughts are with you this fire season. Please feel free to reach out to me or my team if we can assist with connectivity issues in any way.

Sincerely,

Susan Stanford
ADM Connectivity
Ministry of Citizens' Services

Sent Friday May 24, 2024 at 3:50pm



Broadband Internet and Mobility Committee Terms of Reference

1. Committee Vision

- 1.1 Residents, businesses, and organizations within the PRRD will have access to reliable, redundant, high-speed Broadband Internet services in their homes, businesses and public buildings, at performance levels that meet all of their needs for health, education, economic development, that are delivered now and into the future.

2. Purpose

- 2.1 The purpose of the Committee is to implement the PRRD's Connectivity Strategy.

3. Definitions

"Delegation" means any person who has requested to speak or make a presentation to the Committee.

'Invited Guest' means a person who has been requested by the Committee to participate in a Committee Meeting or make presentation to the Committee.

"Member" includes Directors, and persons who are not Directors whom have been appointed by the Board to the Committee.

4. Role of the Committee:

- 3.1 The roles of the Committee include:
- a) Engage with service providers and stakeholders;
 - b) Research and review current technologies and market trends;
 - c) Develop a Broadband Internet and Mobility connectivity work plan,
 - d) Identify specific projects to enhance Broadband Internet and Mobility connectivity within the PRRD;
 - e) Examine funding opportunities,
 - f) Recommend to the Regional Board formal or informal partnership opportunities that would enhance the success of connectivity related projects;
 - g) Make recommendations to the Regional Board in the development and implementation of policies, procedures, bylaws, reports and actions plans to enhance Broadband Internet and Mobility connectivity;
 - h) Recommend grant applications for connectivity projects for the Board's review and submission; and
 - i) Complete community consultation on the development and implementation of broadband connectivity plans and projects, and report back to the Regional Board.

5. Structure of the Committee

- 5.1 The Broadband Internet and Mobility Committee will consist of all 12 Regional Board Directors, or their appointed alternates.
- 5.2 The Regional Board Chair may appoint additional Members who are not Directors to the Committee.
- 5.3 The Committee may make recommendations to the Regional Board to appoint additional Members who are not Directors to the Committee.
- 5.4 The Regional Board may, by Board resolution, change the Members of the Committee as needed.
- 5.5 The Committee Meetings will be chaired by a Committee Member elected by the Committee on an annual basis at the first Meeting of the calendar year.
- 5.6 A Vice-Chair will be elected by the Committee on an annual basis at the first Meeting of the calendar year.
- 5.7 In the absence of the Chair, the Vice-Chair will chair the Meeting.
- 5.8 The Committee or Committee Chair, may invite guests to attend and participate in Meetings.

6. Meetings

- 6.1 The Committee shall meet annually in January, April, July and October.
- 6.2 A Special Meeting may be called at the request of the Committee Chair, by any two Directors named to the Committee, or by Board resolution.
- 6.3 Notice of a Special Meeting must be delivered in writing to each Director at least five days before the date of the Meeting.
- 6.4 Regular Committee Meetings may be cancelled by Committee Resolution, or when the Committee Chair determines there is insufficient business to convene a meeting, provided that at least two days written notice is given.
- 6.5 Meetings will be open to the public, unless authorized to be closed as per Section 90 of the *Community Charter*.

7. Meeting Agendas

- 7.1 Agendas for Regular Committee Meetings will be published to the PRRD website the Friday before the Meeting.
- 7.2 Items for the regular agenda must be provided to Administration by noon the Monday prior to agenda publishing.

8. Meeting Minutes

8.1 The Committee Meeting minutes will be placed on the Board Agenda Consent Calendar.

9. Participation

9.1 Committee Meetings may be conducted by means of an Electronic Meeting.

9.2 In the case of an Electronic Meeting, the Meeting facilities must enable the public to hear the Committee Members participating electronically for the open portions of the Meeting.

9.3 The Committee Chair may request that an electronic participant be disconnected if there is significant noise, interference or other disturbance that is disruptive to the proceedings, or if the quality of the connection does not permit the public or other members to hear, or see and hear, the member who is participating electronically.

10. Quorum

10.1 A simple majority, one Member more than 50%, shall constitute a quorum at all Regular and Special Meetings.

10.2 If there is no quorum within 30 minutes after the time specified in the notice of the Meeting, the Meeting is cancelled, and all business on the agenda for that Meeting must be dealt with at the next Regular or Special Meeting.

11. Delegations and Presentations

11.1 Delegations will be limited to two per Meeting.

11.2 The maximum time for of a delegation before the Committee is 15 minutes.

11.3 The maximum time for a presentation of an Invited Guest of the Committee is 60 minutes, unless otherwise permitted by resolution of the Committee.

11.4 Any materials to be distributed to the Committee as part of a delegation or presentation must be included on the Meeting Agenda.

12. Voting

12.1 Director and their appointed alternates under the *Local Government Act Sections 200 and 201* are the voting Members of the Committee.

12.2 Committee Members appointed to the Committee by the Regional Board who are not Directors are non-voting Members.

12.3 Where a Director who is present when a vote is taken abstains from voting, that Director shall be deemed to have voted in the affirmative.

12.4 After the vote is taken, the Committee Chair shall state the names of those Directors voting in the negative, and the Recorder will enter those names in the minutes.

12.5 All recommendations of the Committee shall be determined by majority vote.

12.6 Tie votes will be defeated.

Date Committee Established	May 27, 2021	Board Resolution #	RD/21/05/13
Date TOR Approved by Board	July 22, 2021	Board Resolution #	RD/21/07/13
Amendment Date		Board Resolution #	
Amendment Date		Board Resolution #	
Amendment Date		Board Resolution #	



Broadband Internet and Mobility Committee Guiding Principles

- ✓ Connectivity is essential to strengthening the social, economic, ecological, and cultural resilience within the region.
- ✓ Connectivity and technology shapes residents' choices, behaviours, and needs.
- ✓ Connectivity is pertinent to all regional district planning and decision-making.
- ✓ The Regional District has a role in ensuring residents have access to high-speed Broadband Internet.
- ✓ The Regional District views Broadband infrastructure as essential infrastructure.
- ✓ The nature and expense of connectivity deployment requires a forward-looking vision to maximize potential and coordinate efforts within the regional district.
- ✓ Convergence of public and private infrastructure where it benefits the public and protects public interests is good public policy.
- ✓ Access to Broadband Internet and infrastructure must be leveraged through Official Community Plans, regional growth planning, and spatial planning (i.e. land use by-laws, subdivision by-laws) to maximize the potential within the region.
- ✓ An understanding of the true drivers and needs for connectivity will inform decisions.
- ✓ Leveraging one infrastructure to advance another (i.e. dig once policies) is in the public interest.
- ✓ Access to Broadband Internet and infrastructure allows the regional district to retain and grow businesses, create and retain skilled workers, and re-invigorate communities.
- ✓ Broadband Redundancy is essential to protect Internet, telephone, cellular, and essential government services throughout the region in the event of damage to Broadband Infrastructure at any time.

PEACE RIVER REGIONAL DISTRICT

Bylaw No. 2487, 2022

A bylaw to establish a Regional Connectivity Service

WHEREAS, pursuant to the *Local Government Act*, a regional district may establish and operate any service that the Board considers necessary or desirable for all or part of the Regional District;

WHEREAS, pursuant to the *Local Government Act*, a regional district exercising a power to provide a service other than a general service, is required to adopt a bylaw respecting that service;

AND WHEREAS the Regional Board recognizes that the Government of Canada has approved a national connectivity strategy that targets provision of access to Broadband for all Canadians at speeds of at least 50 Megabits per second (Mbps) download / 10 Mbps upload, and mobile wireless coverage availability where Canadians live and work, and along major road corridors;

AND WHEREAS the Regional Board supports the Province of British Columbia's commitment to connect rural and remote communities and First Nations in every part of BC to high-speed internet over the next five years;

AND WHEREAS the Regional Board adopted the Peace River Regional District Connectivity Strategy on November 14, 2021 to identify options and actions for the Regional Board to ensure that critical high-speed Broadband Internet services are accessible throughout the entire district;

AND WHEREAS pursuant to the *Local Government Act*, consent for the establishment of the regional connectivity service through adoption of this bylaw has been obtained;

NOW THEREFORE the Board of the Peace River Regional District, in open meeting assembled, enacts as follows:

GENERAL PROVISIONS

1. This bylaw shall be cited as "Regional Connectivity Service Establishment Bylaw No. 2487, 2022".
2. If any portion of this bylaw is declared invalid by a court, the invalid portion shall be severed and the remainder of the bylaw is deemed valid.
3. The headings used in this bylaw are for convenience only and do not form part of this bylaw, and are not to be used in the interpretation of this bylaw.
4. Any enactment referred to herein is a reference to an enactment of the Province of British Columbia and regulations thereto, as amended, revised, consolidated, or replaced from time to time.

DEFINITIONS

5. In this Bylaw,
'Broadband Infrastructure' means infrastructure that supports or enables access to high-speed internet, cellular networks, or other telecommunication networks.

SERVICE BEING ESTABLISHED

6. The Peace River Regional District hereby establishes a service to be known as “Regional Connectivity Service” that authorizes the Regional District to:
 - a) Enter into partnering agreements with internet or cellular service providers to apply for grant funding from other levels of government or grant programs for Broadband Infrastructure,
 - b) Enter into partnering agreements to allow the PRRD to provide capital grants for Broadband Infrastructure projects, and
 - c) Provide Peace River Regional District resources required to manage and advance Broadband Initiatives.
7. The establishment of this service includes the authority to borrow funds for the provision of the service.

SERVICE AREA BOUNDARY

8. The service area boundary is the entire Peace River Regional District.

PARTICIPATING AREA

9. The participating areas are all Electoral Areas and all member municipalities of the Peace River Regional District.

COST RECOVERY

10. The annual cost of providing the Service within the service area boundary as defined in Clause 9 above, shall be recovered by one of more of the following:
 - a) A property value tax imposed pursuant to the provisions of the *Local Government Act*, levied against the net taxable value of improvements only;
 - b) Revenues raised by other means authorized by the *Local Government Act*, or another Act;
 - c) Revenues raised by way of agreement, enterprise, gift, grant, or otherwise.

MAXIMUM REQUISITION

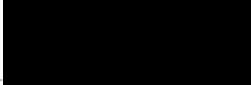
11. The maximum requisition limit that may be requisitioned in any one year for the service is the greater of \$375,000 or an amount equal to the amount that could be raised by a property value tax of **\$0.0234/\$1,000** when applied to the net taxable value of land and improvements in the service area.

READ A FIRST TIME this 26th day of May, 2022.

READ A SECOND TIME this 26th day of May, 2022.

READ A THIRD TIME this 26th day of May, 2022.

I HEREBY CERTIFY THE FOREGOING to be a true and correct copy of Bylaw No. 2487, 2022 cited as "Regional Connectivity Service Establishment Bylaw No. 2487, 2022" as read a third time by the Regional Board of the Peace River Regional District at a meeting held on the 26th day of May, 2022.


Tyra Henderson, Corporate Officer

APPROVED by the Inspector of Municipalities this 5th day of August, 2022.

RECEIVED the assent of the electors on the 15th day of October, 2022.

ADOPTED this 10th day of November, 2022.

Filed with the Inspector of Municipalities this 12th day of December, 2022.


~~Brad Sperling, Chair~~

Leonard Herbert, Chair

(Corporate Seal has been affixed to the original bylaw)


Tyra Henderson, Corporate Officer

I hereby certify the foregoing to be a true and correct copy of
"Regional Connectivity Service Establishment Bylaw No. 2487, 2022"
as adopted by the Peace River Regional District
Board on Nov. 10th, 2022.


Tyra Henderson, Corporate Officer



REPORT

To: Chair and Directors

Report Number: ADM-BIMC-024

From: Corporate Administration

Date: July 17, 2024

Subject: Notice of Closed Broadband Internet and Mobility Meeting – July 17, 2024

RECOMMENDATION: [Corporate Unweighted]

That the Broadband Internet and Mobility Committee recess to a Closed Meeting for the purpose of discussing the following items:

Agenda Item	Description	Authority
3.1	Minutes	CC Section 97(1)(b) Closed Minutes, access to records.
5.1	Delegation	CC 90(1)(j) Information Prohibited from Disclosure under the <i>Freedom of Information and Protection of Privacy Act</i> .

BACKGROUND/RATIONALE:

As per the Closed Meeting Process and Proactive Disclosure Policy.

ALTERNATIVE OPTIONS:

The Broadband Internet and Mobility Committee may recess to a Closed Meeting to discuss whether or not the items proposed properly belong in a Closed Meeting as per *Community Charter* Section 90(1)(n).

STRATEGIC PLAN RELEVANCE:

☒ Not Applicable to Strategic Plan

FINANCIAL CONSIDERATION(S):

Not applicable.

COMMUNICATIONS CONSIDERATION(S):

Not applicable.

OTHER CONSIDERATION(S):

Not applicable.