



INTERIOR B.C. CONNECTIVITY BENEFITS STUDY

PREPARED FOR MINISTRY OF CITIZENS' SERVICES
BY BC STATS

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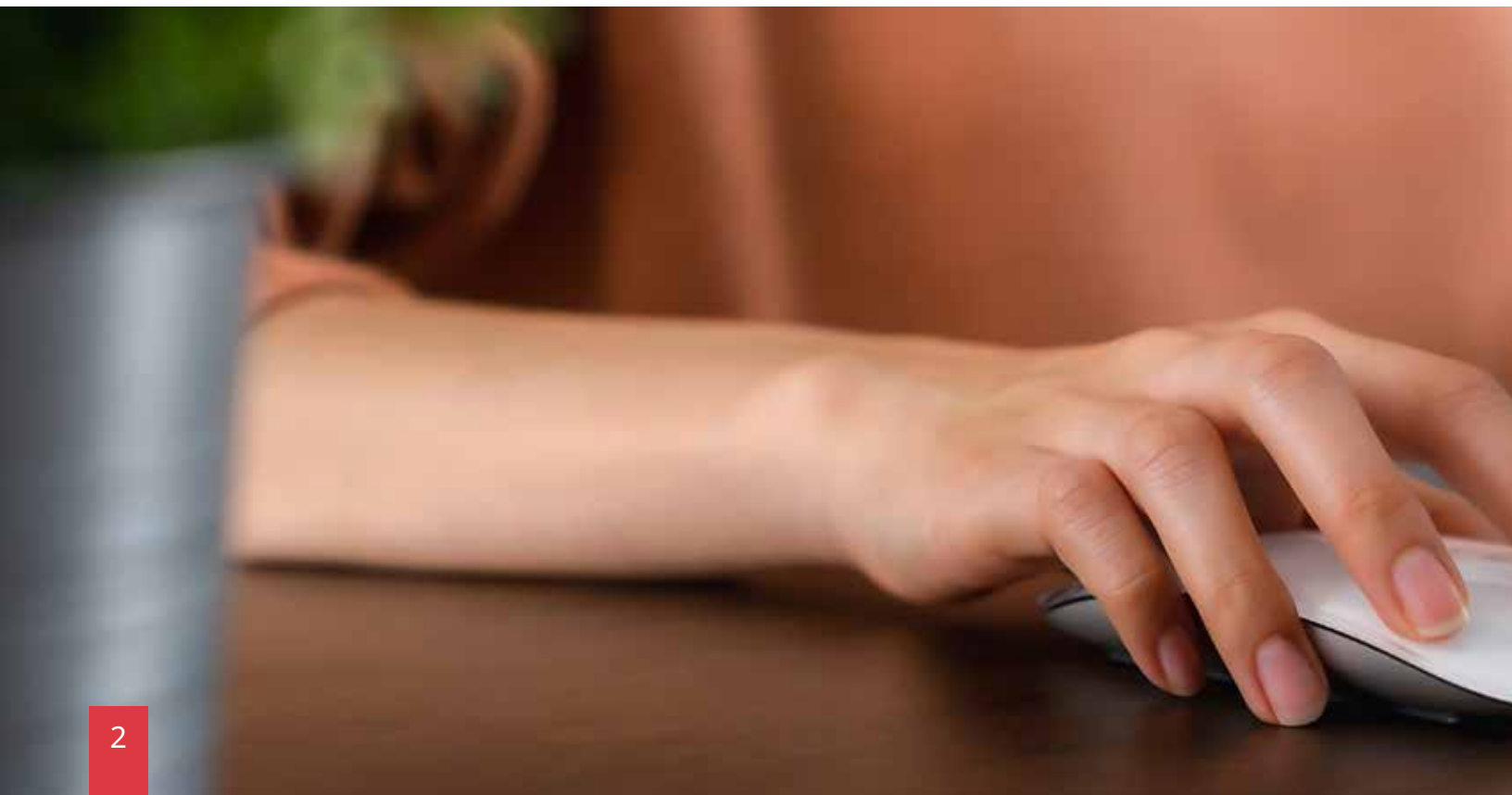


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EXECUTIVE SUMMARY

The Interior B.C. Connectivity Benefits Study describes the anticipated economic impact of provincial investment in connectivity for the interior region of British Columbia. This study analyzes the short- and long-term economic impact of provincially funded connectivity infrastructure in the interior region using economic modelling to estimate the anticipated benefits to the region and province. This study is the third in a series of economic benefits studies on rural connectivity. The previous reports on [northern B.C.](#) and the [Kootenays](#) are available on the Connectivity in B.C. web pages.

Overall results in this study are similar to the findings of the previous studies: funding to support the expansion of high-speed internet to underserved rural areas is expected to have positive short- and long-term impacts to B.C.'s Gross Domestic Product (GDP) for the region and for the province. A breakdown of the investment and economic benefits of high-speed internet expansion for the interior region and the province are as follows:

- The region received **\$93.6 million** for connectivity infrastructure between 2017 and 2022 in funding from the Province's Connecting British Columbia program. This supports 44 connectivity projects (some complete or in progress at time of report publication) which will benefit an estimated 9,900¹ households.
- This \$93.6 million in provincial funding leveraged approximately \$200.8 million from other sources, which equals **\$294.4 million** in total funding for internet projects in the region.
- 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 **\$3.14** of total private and public sector investment leveraged to support rural connectivity expansion for the region.

¹Estimated households benefitting is calculated as 95 per cent of pseudo households served by high-speed internet projects in the study area. The Pseudo-Household Demographic Distribution is a geospatial representative distribution of demographic data (population and households) derived from the Canadian Census from Statistics Canada. For more information: <https://open.canada.ca/data/en/dataset/b3a1d603-19ca-466c-ae95-b5185e56addf>.

RURAL ECONOMIC BENEFITS FOR THE INTERIOR

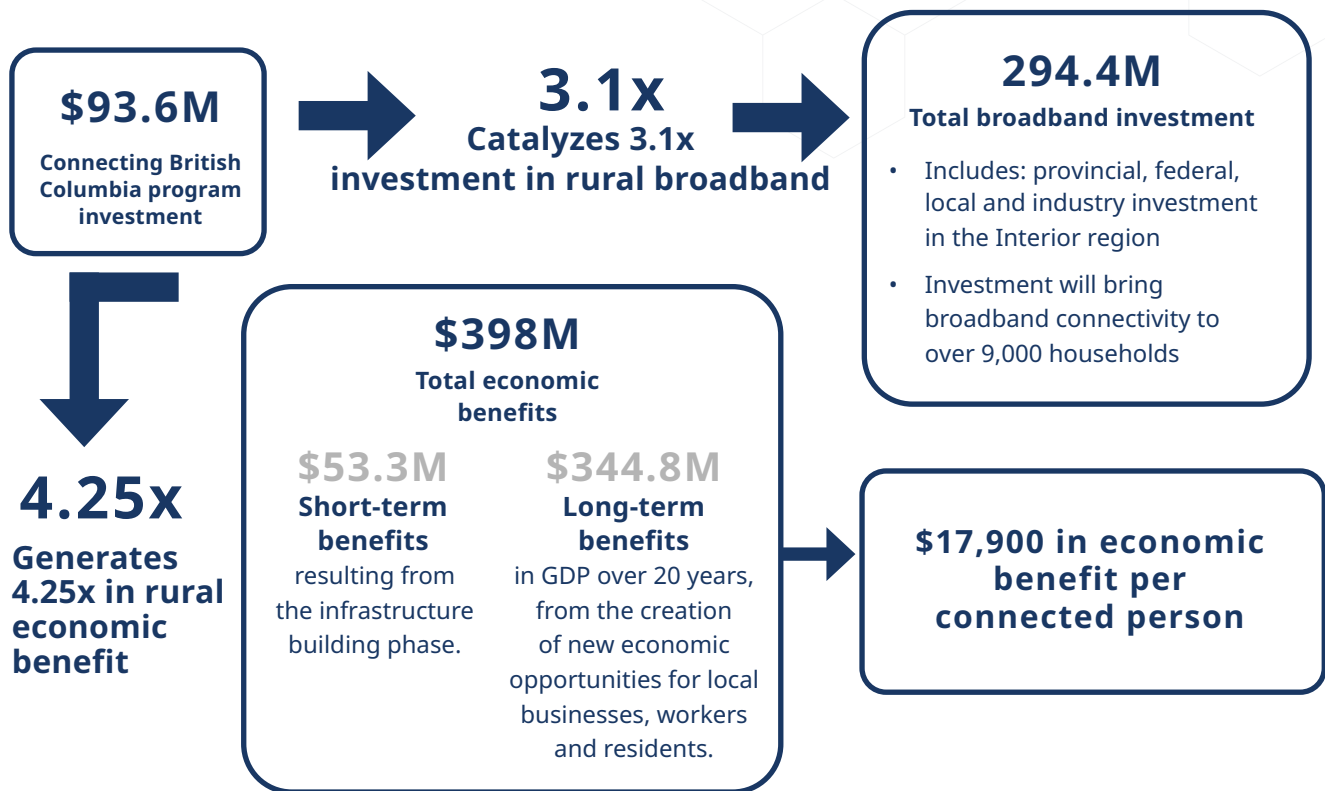


Figure 1: Summary of rural economic benefits of connectivity for the B.C. interior region

- Short-term economic benefits (defined here as the construction phase and the building of the infrastructure) are summarized as:
 - For the interior region:
 - \$32.2 million** increase in GDP.
 - 300 new jobs.**²
 - \$1.5 million** in municipal and regional district tax revenue.
 - For B.C. (including the interior region):
 - \$53.3 million** increase in GDP.
 - 479 jobs.**
 - \$9.9 million** in provincial tax revenue.
- Long-term impacts (defined here as increased GDP because of productivity from improved access to high-speed internet services) are estimated at **\$344.8 million** in increased GDP over 20 years for B.C.

In total, it is estimated that the initial provincial investment of \$93.6 million in connectivity in the interior region will generate **\$398 million** in short- and long-term economic benefits to the province and the region. This translates into:

- 4.25x** the initial provincial investment; and
- A **\$17,900 benefit per connected person** for newly subscribed households within a 20-year time span (Figure 1).

²The jobs number is a measure of total full-time, part-time and seasonal jobs and should not be conflated with full-time equivalent jobs, which are full-time positions only.





BACKGROUND

Access to high-speed internet in rural communities in the interior region is foundational to economic and social equity and prosperity. However, the cost of bringing these services to rural and remote communities can be prohibitively high for private sector service providers. The federal and provincial governments have responded with funding programs such as the Universal Broadband Fund and Connecting British Columbia to support the cost of infrastructure required to deliver high-speed internet services to these areas.

In March 2022, the provincial and federal governments announced a joint investment of up to \$830 million to support expanding high-speed internet services to every community in B.C. by 2027. This funding builds on prior investments, and supports the current funding program, Connecting Communities BC.

To better understand the economic impact of connectivity projects, a model was created to estimate the short- and long-term impacts of investments for rural communities. While academic literature provides some frameworks to analyze connectivity benefits, many existing studies take a whole economy approach and aggregate rural and urban results.

In 2021, the Province hired Deloitte to develop an economic framework through which the value of rural broadband connectivity could be measured, understood, and included in future evaluation of project benefits. In 2022, BC Stats built on Deloitte's framework with the Kootenay Connectivity Benefits Study and the Northern B.C. Connectivity Benefits Study, which examine the short- and long-term economic impacts of rural connectivity infrastructure spending in that region.

This report is the third in a five-part series that examines the economic benefit of provincial connectivity spending in rural areas of B.C. This report is focused on the interior region of the province.



PROFILE OF THE B.C. INTERIOR

The interior region of British Columbia stretches between the eastern provincial border to the coastal mountain ranges in the west. The landscape features expansive prairies, fertile agricultural land, mountain ranges, as well as many parks, lakes and forested areas. The area is home to many small communities and a few larger urban centers. Its population of just under one million spreads north-south along valleys, notably in the Okanagan, with other population centres dispersed in a large area. The area is home to 58 First Nation communities.

For the purposes of this study, we define the interior region as the economic regions of the Cariboo and the Thompson Okanagan (excluding the urban and suburban area around Kelowna), as well as a small portion of the Mainland/Southwest region (see Figure 2).

This area includes seven regional districts. These are: Cariboo; Fraser-Fort George; Okanagan-Similkameen; Thompson-Nicola; North Okanagan; Columbia-Shuswap; and Squamish-Lillooet regional districts.

The area of study is marked in Figure 3. A breakdown of the region by regional districts and First Nation communities is in Figure 4, and in Figure 5 there is a comparison of land mass and population density with previous study areas.

The regional districts of Metro Vancouver; Sunshine Coast; and Fraser Valley are not considered part of the study area and will be included in the next study on the economic impacts along the coast. The Regional District of Central Okanagan, which includes Kelowna, has been excluded to remove a larger urban centre and allow the study to focus on the rural areas in the interior region.



Figure 2: B.C. economic regions

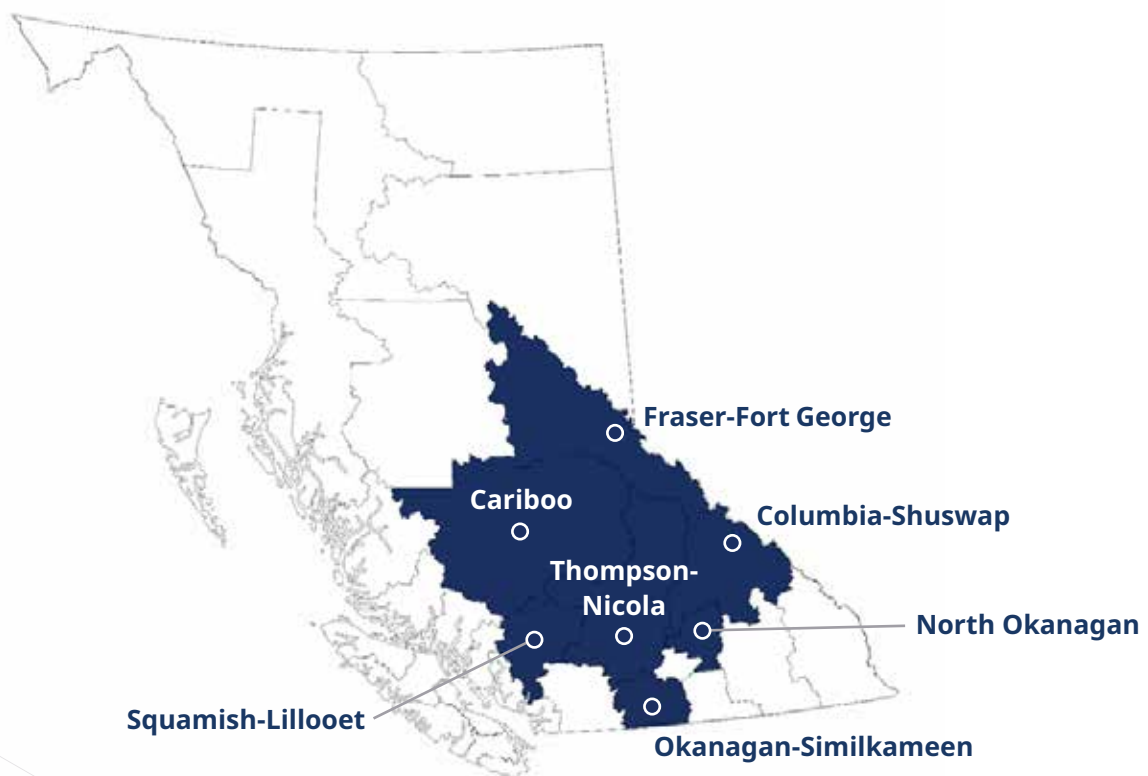


Figure 3: Interior region (with area of study in dark blue)

	Regional districts	First Nation communities ³
Cariboo economic region	Cariboo and Fraser-Fort George	?Esdilagh First Nation, Canim Lake Band, Esk'etemc, High Bar First Nation, Lheidli T'enneh First Nation, Lhoosk'uz Dené Nation, Lhtako Dene Nation, McLeod Lake Indian Band, Nazko First Nation, Stswecem'c Xget'tem First Nation, Tl'esqox, Tl'etinqox Government, Tsideldel First Nation, Ulkatcho Indian Band, Williams Lake First Nation, Xat'sũll First Nation, Xeni Gwet'in First Nations Government, Yunesit'in Government
Thompson–Okanagan economic region (omitting the Regional District of Central Okanagan)	Okanagan-Similkameen, Thompson-Nicola, North Okanagan, and Columbia-Shuswap	Adams Lake Indian Band, Ashcroft Indian Band, Bonaparte First Nation, Coldwater Indian Band, Cook's Ferry Indian Band, Kanaka Bar Indian Band, Lower Nicola Indian Band, Lower Similkameen Indian Band, Lytton First Nation, Neskonlith Indian Band, Nicomen Indian Band, Nooaitch Indian Band, Oregon Jack Creek, Shackan Indian Band, Simpcw First Nation, Siska First Nation, Skeetchestn Indian Band, Skuppah Indian Band, Skwlax te Secwepemculecw, Splatsin First Nation, Tk'emlúps te Secwépemc, Tsal'alh, Whispering Pines/Clinton Indian Band
Lower Mainland–Southwest economic region (including only a portion of the region that covers the Squamish-Lillooet Regional District)	Squamish-Lillooet	Sḵwxwú7mesh Úxwumixw (Squamish Nation), Líl'wat Nation, N'Quatqua, Samahquam, Sekw'el'wás, Skatin Nations, T'ít'q'et First Nation, Tsal'alh, Ts'kw'aylaxw First Nation, Xaxli'p, Xa'xtsa Nation, Xwísten, Stó:lō, Tsleil-Waututh Nation, Nlaka'pamux, Tsilhqot'in, and Secwépemc Nations. ⁴
The interior area of study (combined region)	Cariboo, Fraser-Fort George, Okanagan-Similkameen, Thompson-Nicola, North Okanagan, Columbia-Shuswap, and Squamish-Lillooet	58 First Nation Communities within the study area

Figure 4: Breakdown of interior region of study by regional districts and First Nation communities

³BC Assembly of First Nations

⁴Squamish Lillooet Regional District

	Total population ²	Land area in square km ²	Population density per square km ²	Total private dwellings per square km ²
Cariboo Regional District	62,931	80,374	0.8	0.4
Columbia-Shuswap Regional District	57,021	28,886	2.0	1.1
Regional District of Fraser-Fort George	96,979	50,581	1.9	0.9
Regional District of North Okanagan	91,610	7,497	12.2	5.7
Regional District of Okanagan-Similkameen	90,178	10,407	8.7	4.5
Squamish-Lillooet Regional District	50,496	16,296	3.1	1.6
Thompson-Nicola Regional District	143,680	44,347	3.2	1.5
Interior (area of study)	592,895	238,388	2.5	1.2

Source: Statistics Canada. Census Profiles. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>.

Figure 5: Interior region population density⁵



METHODOLOGY

This study examines the economic impact of high-speed internet projects funded by the Province in the rural interior of B.C. between 2017 and 2022. The analysis is based on 44 connectivity projects throughout the region and includes both transport and last-mile internet projects to the home.⁶ The projects in the analysis were scheduled to begin construction between 2018 and 2022. Project construction spending data was used to estimate economic impacts of the work in the short-term during the years that projects are being built.

For an accurate analysis, this study narrows its geographical focus to the regional district level to exclude the major urban centers of Kelowna and Greater Vancouver. Note that Prince George and Kamloops are within the study area, but the populations impacted by the projects analyzed are not in close proximity to these cities.

Narrowing the focus of the analysis enables a more accurate measurement of the economic impact to a defined rural region. The area of study is outlined in dark blue in Figure 3 (page 9).

The analysis on economic impacts was completed using 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.⁷

⁶All 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.

⁷Project 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.



Assessing short-term impacts

High-speed internet expansion projects, like any infrastructure projects, contribute to the local economy in the short term by creating demand for products and services required to deliver the project during the initial build phase. BC Stats worked with the Connectivity Division in the Ministry of Citizens' Services to identify 44 high-speed internet projects throughout the interior region to use for the analysis. The projects were selected based on criteria that they:

- received Connecting British Columbia funding between 2017 and 2022; and
- take place in the defined areas of the study including the seven regional districts in the interior region.

Some projects span multiple regional districts, including outside of the interior region. The Connectivity Division provided ratios to support BC Stats in proportioning the expected amount of spending for each project in the defined study area.

BC Stats used the BC Input-Output Model (BCIOM – see Appendix B) to estimate short-term impacts for the local economy and the province. The BCIOM is designed based on Statistics Canada supply use tables.⁸ It is a macroeconomic modeling tool that

allows economists to estimate the impacts of increased industry spending on the economy of the region, and province.

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 paying wages to the employees that are building the infrastructure or doing the engineering design if they are employed directly by the company.
- **Indirect impacts** include money that is spent by contractors on wages and the goods they purchase. This would include an external firm 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 from laying fibre lines and goes to a local establishment for lunch, the money spent on lunch is an induced impact from the project.

⁸More information about Statistics Canada supply use tables is available at this link: <https://www150.statcan.gc.ca/n1/pub/13-607-x/2016001/1067-eng.htm>.

Assessing long-term impacts

By creating new economic opportunities for local businesses, workers and residents, the provision of new high-speed internet services can contribute to stronger economic growth for years after the construction phase is complete and internet services are live. To describe this impact, BC Stats uses empirical relationships established in economic literature, to develop an approach to estimate the long-term economic impacts of the projects in scope of this study. Four different studies were analyzed to inform the impact on GDP of increased high-speed internet availability (listed in Appendix A).

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.⁹ This formula is then applied to the increase in households with access to high-speed internet, resulting from projects funded by the Connecting British Columbia program.

- The calculation is done in terms of net present value of resultant GDP Growth.¹⁰ For this approach, a social discount rate of three per cent was used based on Government of Canada data.¹¹ The social discount is used to adjust future costs and benefits to values in current terms.

A key assumption for this approach, based on data from the Connectivity Division, is that 95 per cent of the households benefitting from the projects would subscribe to the new service once available. GDP data produced by Statistics Canada for sub-provincial geographies¹² was not available at a detailed enough level to use in this analysis but suggests that GDP growth happens in B.C. at a rate relatively in line with population share. Figure 6 shows the productivity impact of high-speed internet services over a 20-year time frame.

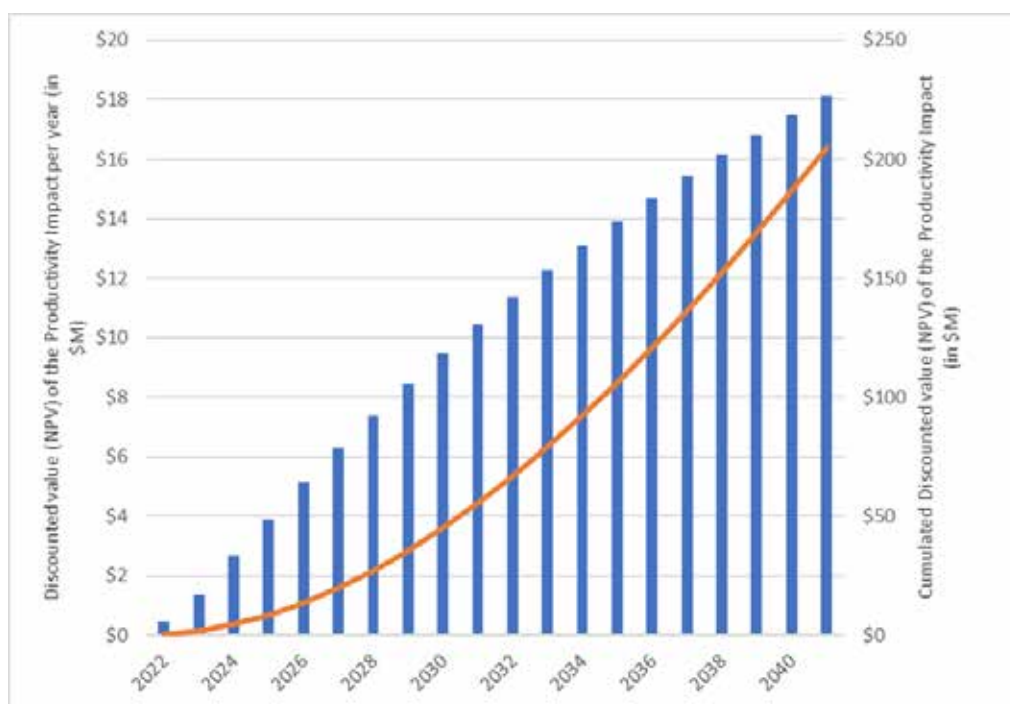


Figure 6: Productivity impact from the increase in access to high-speed internet services

⁹This estimate is developed by BC Stats based on the studies listed in Appendix A.

¹⁰Net 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.

¹¹Government 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>.

¹²Statistics Canada. Table 36-10-0468-01 Gross domestic product (GDP) at basic prices, by census metropolitan area (CMA) (x 1,000,000). <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610046801>.



RESULTS

The study concludes that from an initial provincial investment of **\$93.6 million**, a total economic benefit to GDP over a 20-year timespan is estimated at **\$398 million**. This initial provincial investment is thus multiplied **4.25 times** in 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 interior region and the province is as follows:

- The region received **\$93.6 million** for connectivity infrastructure projects between 2017 and 2022 from the Province through the Connecting British Columbia program. This supports 44 connectivity projects (some complete or in progress at time of report publication) which will benefit approximately 9,900 households.
- This \$93.6 million in provincial funding leveraged approximately \$200.8 million from other sources, which totals **\$294.4 million** in funding for internet projects in the region.
- 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 **\$3.14** of total private and public sector investment leveraged to support rural connectivity expansion for the region.

In total, it is estimated that the initial provincial investment of \$93.6 million in connectivity in the northern region will generate **\$398 million** in short- and long-term economic benefits to the province and the region.

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 \$53.3 million. These short-term impacts (defined here as benefits during the construction phase and the building of the infrastructure) also increase income earned by workers (labour income), add jobs to the economy, and increase tax revenue both locally and provincially. For the interior region impacts are estimated to be:

- **\$32.2 million** increase in GDP.
- **\$18.9 million** increased labour income.
- **300 new jobs.**
- **\$1.5 million** in municipal and regional district tax revenue.

For B.C. (including the interior region) impacts are estimated to be:

- **\$53.3 million** increase in GDP.
- **\$31.5 million** increase in labour income.
- **479 new jobs.**
- **\$9.9 million** in provincial tax revenue.

A further breakdown of short-term economic impacts is in Figure 7.

	Estimated economic contribution in the Interior region			Estimated economic contribution in the rest of B.C.		
	Direct	Indirect	Induced	Indirect	Induced	TOTAL including the interior
Business expenditure	\$113.5M	\$7.8M	\$19.7M	\$19.6M	\$22.5M	\$178.8M
GDP	\$21.4M	\$3.7M	\$8.1M	\$9.0M	\$12.3M	\$53.3M
Labour income	\$14.1M	\$2.1M	\$3.1M	\$5.5M	\$7.2M	\$31.5M
Employment – Full Time Equivalent (FTEs) ¹³	171 FTEs	28 FTEs	54 FTEs	66 FTEs	76 FTEs	387 FTEs
Employment – number of jobs	203 Jobs	34 Jobs	71 Jobs	80 Jobs	101 Jobs	479 Jobs
Gov't revenues – provincial taxes	\$6.8M	\$302,000	\$1.2M	\$728,000	\$1.1M	\$9.9M
Gov't revenues – municipal and regional taxes	\$1.1M	\$70,000	\$393,000	\$191,000	\$487,000	\$2.2M

Figure 7: Short-term economic impacts¹⁴

¹³Full 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.

¹⁴Numbers in the table are rounded. Direct impact in rest of B.C. is negligible and thus not included in the table.

Long-term economic benefits

Long-term economic impacts of new connectivity infrastructure for the interior region are estimated over a 20-year period using methodology outlined on page 14. Based on new high-speed internet services available in the region, BC Stats estimates that productivity growth over 20 years after project completion will result in a **\$398 million total increase in GDP**. This estimate describes a net present value of the impact on GDP growth in the interior region and the province combined. This is:

- **4.25 times** the return on initial provincial investment in the region of **\$93.6 million**.
- A **\$17,900 benefit per connected person** for newly connected households within a 20-year time span.

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 the region, 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 rest of the province.
- The number of households benefitting is calculated as 95 per cent of estimated households served by new internet services. The Province uses a pseudo household model to estimate the number of households served from projects in an area.
- Some under counting may have occurred in indirect and induced impacts attributed to the interior region because of the model limitations related to regional analysis. These impacts will show in the rest of B.C. total.
- 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 interior region is assumed to be the same as at the provincial level.

REGIONAL STUDY COMPARISONS

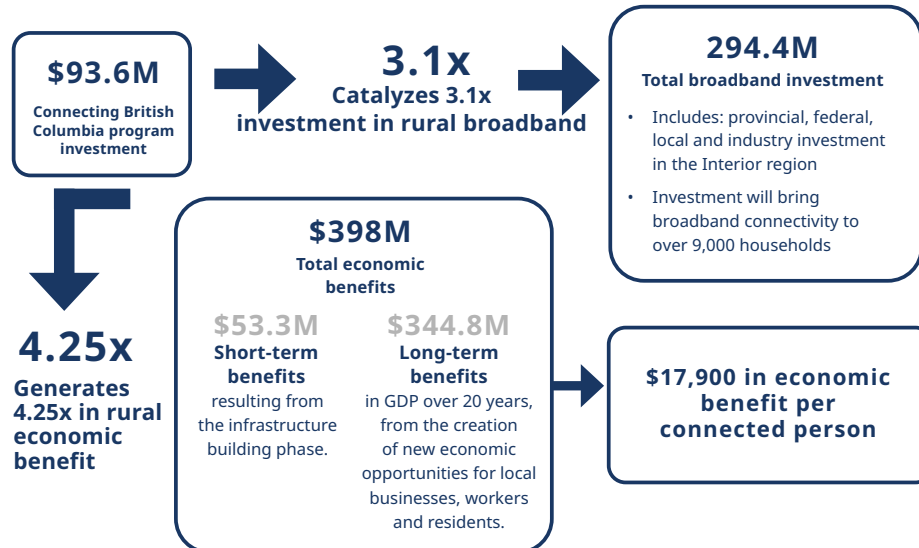
The Interior B.C. Connectivity Benefits Study shows both similarities and divergences compared to the previous studies in this series. This section examines these and explores some reasons why the three studies may differ.

A primary similarity between the studies is that the Province's connectivity investment delivers substantial returns for the regions and the rest of B.C. For the interior region, this return is **4.25 times** the initial provincial investment in the long term, creating significant economic impacts for the local economy and provincial GDP. For the North this return was **seven times** and for Kootenay region, this return was **14 times** the initial investment in the long term. Some of the key metrics from the studies are outlined in Figure 8. A graphic representation of the findings for all studies is in Figure 9.

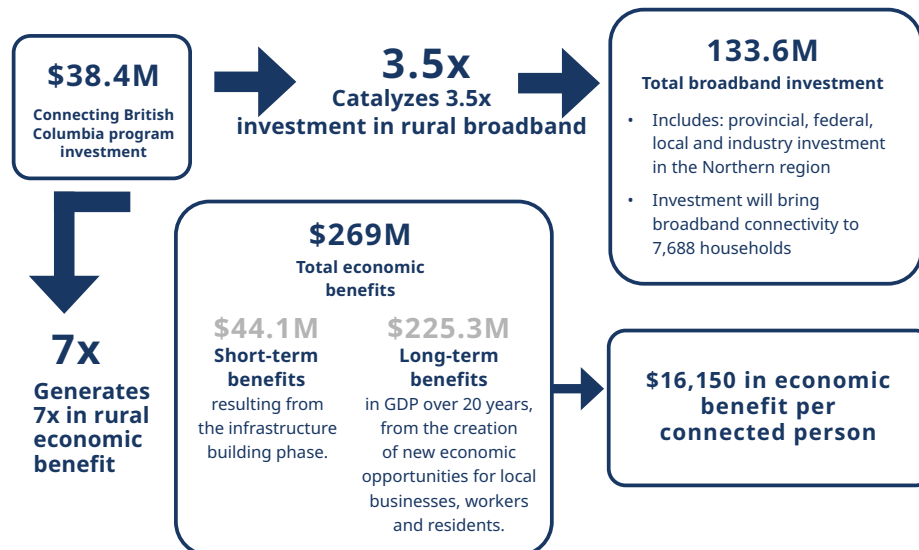
	Interior region	Northern region	Kootenay region
BC investment (\$million)	93.6	38.4	19.4
Total investment (\$million)	294.4	133.6	105.1
Investment leveraged per dollar of provincial investment	3.14	3.48	5.43
Total multiplied return on initial investment	4.25 x	7 x	14 x
Total population	592,895	160,401	161,557
Total land area (km ²)	238,388	527,705	57,673
Population density (per km ²)	2.5	0.3	2.8
Private dwellings (per km ²)	1.2	0.1	1.5
Regional increase in GDP short term (\$million)	21.4	22.2	56.2
Total increase in GDP short term (\$million)	53.3	44.1	66.5
Total increase in GDP long term (\$million)	344.8	225.3	214.3
GDP as ratio of investment short term	0.18	0.33	0.63
GDP as ratio of investment long term	1.17	1.69	2.04
Total economic benefit from initial investment (\$million)	398	269	281
Households with new access	9,930	7,688	10,574
Economic benefit per newly connected person (\$)	17,900	16,150	14,800

Figure 8: Comparison of B.C. Interior and previous studies features and impacts

RURAL ECONOMIC BENEFITS FOR THE INTERIOR



RURAL ECONOMIC BENEFITS FOR THE NORTH



RURAL ECONOMIC BENEFITS FOR THE KOOTENAYS

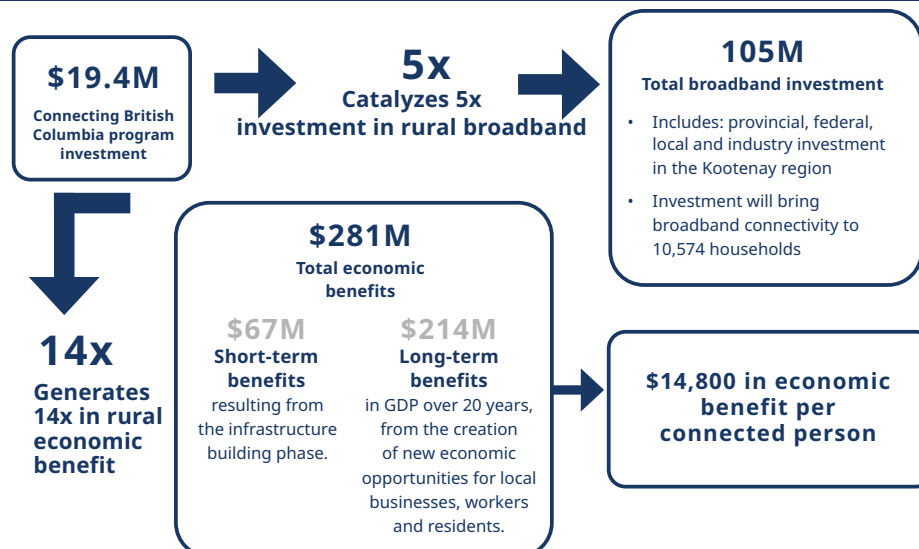


Figure 9: Graphic comparison of a Interior B.C., Northern B.C., and Kootenay Connectivity Benefit Studies



Study comparison conclusions

The study finds the return on provincial investment in the interior region is lower than in the previous regions. This can be attributed to several factors:

- **Need for transport and last-mile infrastructure** — The interior, similar to the northern region, required large transport projects along major corridors to increase high-speed internet capacity and resiliency to the area. In addition, last-mile projects to the home were needed to deliver internet services to outlying households in rural and remote areas. Many of the population centres in the interior region are considered served with high-speed internet, and so remaining households outside of these centres are in harder to reach areas. By contrast, the Kootenay region had significant existing transport infrastructure already in place during the study timeframe, so connecting households required less transport projects and thus, on aggregate, were less expensive.
- **Changes in the input-output model** — The BC Input-Output model is updated annually to ensure the model captures the most accurate data trends available. Since the first two studies were released, the model has been updated with new data and assumptions, including some measures related to impacts of COVID-19. The current input-output model, for example, has lower spending estimates for British Columbians during the pandemic.

The final connectivity benefits study will look again at all areas of the province, using the same model and factors, which will allow for a like-for-like comparison between regions.

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: B.C. 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 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:

- 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 on the level of output. No consideration is made to price effects, substitution, changing technology or economies of scale.

- It is assumed that there are no constraints on resources — supply is infinite and perfectly elastic.
- It is assumed that all local employment resources are efficiently used and at full capacity, there is no underemployment of resources.
- IO models are flow models. Stocks are not explicitly represented, which implicitly assumes that goods can be produced without additions to capital stock.
- 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.

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.



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.

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