

Cybera White Paper:
Impact of COVID-19 On Rural Internet In Alberta, And
Necessary Next Steps

Updated June 4, 2020

Abstract

In response to the evolving COVID-19 pandemic, on March 16, 2020, the Government of Alberta ordered the immediate cancellation of on-site classes at schools and universities across the province. Today, 741,802 K-12 students and 194,010 post-secondary students in Alberta are learning from home, and will likely continue to do so until at least the end of current school semesters.^{1 2} A significant portion of the internet bandwidth used by these students (and their instructors) has now migrated from SuperNet and CyberaNet (which supply much of the internet connections to Alberta's educational institutions), to private internet plans on residential networks. Overall, global internet traffic increased 56% in March, and has remained at above-average levels since.³

In this white paper, we will outline the scope of the internet connectivity problem in Alberta based on data from Cybera's member base and the Research and Education Network usage statistics, as well as outreach conducted by Cybera with our K-12 and post-secondary community members, and Alberta's rural internet service providers. This white paper will demonstrate that a significant portion of the province's population are vulnerable to unaffordable overage charges and intermittent disconnections of service. We believe all levels of government must act now to mitigate the financial and social harms to Albertans.

The importance of connectivity will only increase as the pandemic continues. Canadians need high-speed internet at affordable rates in order to work or learn from home, contribute to the economy, and interact with essential public health and government services.

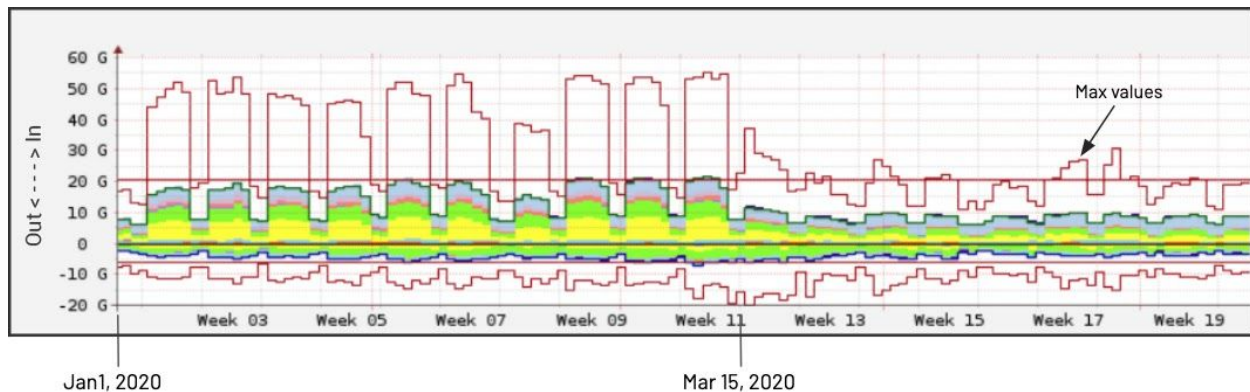
Scope of the Problem – Residential Networks

Cybera provides 52 K-12 school districts and 26 post-secondary institutions, in Alberta, with high-bandwidth access to the National Research and Education Network (NREN). This represents 76% of the province's K-12 students, and 100% of its post-secondary students and researchers. Since the physical closure of most Alberta educational facilities in mid-March, Cybera has observed a sudden and significant drop in its network traffic, as outlined below.

¹ <https://www.alberta.ca/student-population-statistics.aspx>

² <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710001801>

³ <https://thelogic.co/news/rogers-and-videotron-suspend-data-limits-on-all-internet-plans-in-response-to-covid-19-teleworking-surge/>



Total traffic through CyberaNet (Peering, R&E, Transit) from January - May 2020

This drop has amounted to a 30–40% reduction in bandwidth usage in schools and universities. Current NREN traffic across the country shows a similar pattern, with bandwidth usage slightly lower than that experienced during holiday weeks, including summer and Christmas. Meanwhile, in Cybera’s discussions with Alberta ISPs, peak network traffic has increased 30-60% for some providers since mid-March, highlighting the shift from public networks to private and residential networks.

The largest ISPs in Alberta – Bell, Telus, Rogers and Shaw – have announced temporary suspensions on data caps on home internet plans in response to the COVID-19 crisis. However, Cybera finds that there is significant misconception about the scope and duration of these suspensions among many rural residents.

Roughly 16.5% of Albertans live in rural areas where the data cap suspensions and other offers from big telcos do not necessarily apply.⁴ This is because they live in areas where these providers do not operate, or they are served by fixed-wireless internet plans, which most ISPs have yet to provide data cap suspensions on. Nationally, 26% of rural communities rely solely on fixed-wireless internet, with no access to broadband wireline service. Because of the infrastructure and delivery setup of fixed-wireless internet, these plans tend to be slower, more expensive, and more limiting in terms of data caps. They are also the most likely to incur overage fees.⁵

In our discussions with rural Alberta ISPs, Cybera heard many providers say that traffic on mobile networks could not be managed without some form of price-based disincentive to limit use. Both MCSnet and Bell have made public announcements to this effect.^{6 7}

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<https://open.alberta.ca/dataset/7d02c106-a55a-4f88-8253-4b4c81168e9f/resource/e435dd59-2dbd-4bf2-b5b6-3173d9bd6c39/download/2016-census-population-and-dwelling-counts.pdf>

⁵ <https://crtc.gc.ca/pubs/cmr2018-en.pdf>

⁶ <https://mcsnet.ca/about/announcements/why-we-are-keeping-internet-limits-in-place/>

⁷ <https://mobilesyrup.com/2020/03/19/bell-10gb-turbo-hub-turbo-stick-mifi/>

In our discussions with rural Alberta residents – many of whom subscribe to fixed-wireless internet plans – they expressed significant concern that they would inevitably experience overage charges. They routinely experienced bill shock on their existing home internet plans *prior* to COVID-19, with extra charges running in the range of hundreds of dollars. **This problem long preceded the global pandemic we are currently experiencing.**

June 4, 2020: The following sections provide updated recommendations for various levels of government, funding bodies and ISPs based on responses we’ve received since the initial draft of this white paper, including a new section on “Recommendations for the Government of Canada”.

Recommendations

Recommendations for the Government of Alberta

Targeted Funding

Based on our discussions with ISPs, citizens, and stakeholders in the rural internet space, it’s recommended that the Government of Alberta work quickly to ensure that those Albertans most vulnerable to these issues do not incur undue financial costs during this time. To do this, the government must leverage existing programs and infrastructure to address market gaps in rural internet access, both in the short and long term. In the short term, Cybera recommends that the Government of Alberta focus on the currently underserved areas of the province, particularly those dependent on mobile or fixed-wireless internet for their connectivity, and make funds available to close those gaps.

Work with Industry

The Government of Alberta should work with ISPs in Alberta – particularly those serving rural communities – to ensure that resources are available to fill gaps in existing home internet plans, and upgrade / build new network infrastructure (where possible). This can start with an assessment of where immediate investment would have the most impact. Communities dependent on wireless internet solutions are unlikely to receive relief in the form of suspensions on data caps or fee forgiveness on low-cost internet plans, as these offers do not apply to them. The Government of Alberta should ensure that such fee forgiveness or data cap suspension offers are made available to all Albertans. It can do this by incentivizing service providers to expand the number of Albertans who are eligible for these offers. Many of the initiatives that the larger

industry players have implemented are positive: for example, Shaw’s decision to open its public WiFi hotspots to non-Shaw customers. The Government of Alberta should be working with smaller ISPs to make such actions feasible in underserved areas of the province.

SuperNet

Cybera recommends that the Government of Alberta leverage the province’s existing public infrastructure network (SuperNet) to expand network access to underserved areas. This would require the government to expand funding and subsidies for “last mile” solutions in areas where public institutions are within reach of the public fibre backbone. Where possible, the province should be working with K-12 and post-secondary institutions to extend their existing on-site connectivity to create WiFi spots that serve outdoor and communal spaces. While some institutions have already done so, or are looking into the feasibility of this approach, many have said it would be difficult to implement because of structural or financial barriers. The provincial government may be able to help institutions address these barriers.

Long-Term

Currently, around 16% of Canadians do not have access to a home internet connection that meets the CRTC’s “universal service objective” target of 50Mbps download and 10Mbps upload, with unlimited data transfer.⁸ The temporary closures of businesses and institutions during COVID-19 have highlighted the need to address these access gaps in Alberta. Where possible, the Government of Alberta should take a leadership role in filling these gaps, and ensure that networks are strengthened and built-out in areas where facilities-based competition has failed to deliver sufficient access. Cybera recommends that the Government of Alberta continue to develop a *Provincial Broadband Strategy* to identify gaps in connectivity in Alberta, and allocate resources to address those gaps. In our role as a technology-neutral, not-for-profit digital enabler, Cybera is able to advise the government on any of these steps.

Recommendations for Large Internet Service Providers

While the Government of Alberta should support ISPs in delivering connectivity to those in need, large service providers should institute practices to ensure their subscribers aren’t subjected to burdensome charges. In many cases, customers have not been made appropriately aware of changes to their plans, and have assumed that they were subject to data cap removals when, in fact, they were not. Large ISPs should ensure that as many of their subscribers as possible are included in data cap suspensions and, where this is not possible, that this information is made clear to their customers.

⁸ <https://crtc.gc.ca/eng/internet/internet.htm>

Recommendations for the Government of Canada

Universal Broadband Fund

On May 1, 2020, the federal government announced it was accelerating the funding commitments it had previously announced as part of the \$6 billion Universal Broadband Fund. These commitments were originally meant to launch later this year and then carry through for the next 10 years. The original target for the Universal Broadband Fund was for 95% of Canadians to have access to the basic service objective of 50/10 Mbps by 2026, and 100% to be connected by 2030. While the expedited deployment of these funds is essential during this time, Cybera also recommends that more substantive changes be made to specific targets and deliverables in the Universal Broadband Fund.

The target of 100% access to 50/10 by 2030 should be changed to more accurately reflect the growth in data usage over time. Past experience shows that it is highly unlikely that 50/10 will be considered “high speed” by 2030. The CRTC’s previous basic service objective of 5/1 only lasted for four years (between 2011-2015). Locking in the existing service objective for 10 years will mean that government and industry will aspire to deliver sub-standard access to rural Canadians, and thereby worsen the digital divide. Cybera recommends that, in light of the increased interest in access to high-speed internet during the current crisis, the federal government should revise its existing universal coverage targets to more accurately reflect data usage trends.

Wholesale Rates

In April 2020, some wholesale internet providers were forced to raise prices on their residential packages as a result of the increased rates being charged by incumbent carriers for access to their networks. Because of the unprecedented 20-50% increases in at-home data usage, resellers have been forced to purchase more bandwidth capacity.

This issue dates back to the response to the August 2019 decision by the CRTC to lower wholesale rates, relative to the October 2016 rates it had previously set. Thanks to this decision, some wholesale ISPs were able to lower the prices of their retail internet plans. However, in the months that followed, legal challenges from incumbent carriers caused the CRTC to freeze this rate reduction, which meant wholesale providers were forced to go back to paying the pre-August 2019 rates. Now, with the dramatic increase in network usage during the current pandemic, these providers are operating at a loss. To continue, they must either reinstate price increases (an unappealing move during the current crisis), or risk going bankrupt.

Either way, it is possible that these providers may lose market share both during the stay-at-home orders period, or after. This would be severely detrimental to competition in the telecommunications sector, in both the short and long term. It would also invariably result in increased prices for Canadian consumers over time. Cybera recommends that the federal government intervene to resolve this dispute in light of increased network demand. Cybera calls on the CRTC, and Innovation, Science and Economic Development Canada, to implement emergency directives to the incumbent carriers to abide by the August 2019 wholesale rate decision.

Spectrum

In its Fall 2018 Report 1 - *Connectivity in Rural and Remote Areas*, the Office of the Auditor General of Canada found that:

“Small Internet providers did not have sufficient access to high-quality spectrum to support broadband deployment in rural and remote areas. [ISED] auctioned spectrum licenses for geographic areas that were too large for smaller service providers to submit bids for. Also, the secondary market for unused spectrum did not function well, partly because licensees had little business incentive to make unused spectrum available for subordinate licensing”⁹

Wireless internet and mobile services are delivered through a system of “radio frequency spectrum.” Wireless spectrum is an incredibly important resource with serious implications for deploying affordable and accessible broadband services. It is clear, however, that the current spectrum auctioning process is insufficiently inclusive. It fails to encourage participation by smaller ISPs, who would be the most likely to deploy wireless solutions in rural and remote areas.

The federal government should work to create a spectrum policy framework that makes it easier for rural areas to access spectrum. Where fibre infrastructure is not feasible, applicants may need to build fixed wireless networks, which requires spectrum. Public spectrum should serve public needs. In rural, unserved, and underserved areas, a more comprehensive mechanism to access licenced, unlicensed, or shared spectrum should be instituted. This is especially true in areas where major telcos own spectrum licenses, but are not making use of them.

The CRTC should urge Innovation, Science and Economic Development Canada to allow for smaller carriers to gain access to low- and mid-band licenses. While some processes exist now for sub-licensing, they should be streamlined to make the process more inclusive for smaller providers.

Currently, spectrum auctioning has netted the federal government roughly \$20 billion through the auctioning process. While there is currently a lack of transparency on where these funds are utilized, recent proposals have recommended that these funds could effectively be allocated to universal connectivity.¹⁰ The federal government has suggested that universal connectivity could be achieved

⁹ http://www.oag-bvg.gc.ca/internet/English/parl_oag_201811_01_e_43199.html

¹⁰ <https://ipolitics.ca/2020/05/08/canadians-without-reliable-internet-access-being-left-behind-experts-warn/>

through a \$6 billion investment over the next 10 years.¹¹ Cybera agrees that funds from spectrum auctioning should be dedicated towards this investment, and recommends the federal government institute such a policy in response to the increased and continuing importance of universal connectivity during this time.

¹¹ https://www.ic.gc.ca/eic/site/139.nsf/eng/h_00002.html