

Telecom Notice of Consultation CRTC 2019-406:
Call for comments regarding potential barriers to the
deployment of broadband-capable networks
in underserved areas in Canada

Submission from Cybera Inc.

1. This document constitutes Cybera’s intervention in response to “Telecom Notice of Consultation CRTC 2019-406: *Call for comments regarding potential barriers to the deployment of broadband-capable networks in underserved areas in Canada.*”¹ Cybera wishes to be considered an intervener in this proceeding.
2. Cybera is the not-for-profit, technology-neutral organization responsible for driving Alberta’s economic growth through the use of digital technology. One of its core roles is the operation of Alberta’s Research and Education Network. This is the dedicated network for unmetered, not-for-profit internet traffic used by Alberta’s schools, post-secondary institutions, and business incubators to enable research, innovation, and enterprise.
3. Cybera recognizes that building broadband-capable networks is a challenging undertaking, especially in rural and remote communities. However, broadband is essential to the social and economic well-being of Canadians, and Cybera welcomes the invitation from the Canadian Radio-Television and Telecommunications Commission (the Commission) to provide comments on the issue of potential barriers to the deployment of broadband-capable networks in underserved areas in Canada.
4. While 85.7% of Canadian households have access to services that meet the Commission’s 2016 universal service objective target of 50 megabits per second (Mbps) download and 10 Mbps upload, with an option for unlimited monthly data transfer, the number of underserved Canadians skyrockets when you look at rural areas.² Outside of the urban centres, only 40.8% of households have access to high-speed internet, and in Indigenous communities, only 31.3% of households have access to services that satisfy the basic service objective.
5. As the current COVID-19 pandemic has made evident, the internet is a lifeline for Canadians. Without affordable, reliable access to this basic service, citizens are unable to obtain critical public health information, participate in economic opportunities, and maintain social connections with their loved ones. Without effective, urgent regulation, many Canadians will continue to be left behind.
6. With that in mind, Cybera proposes the following recommendations;

Inclusive funding criteria

7. In order to achieve the universal service objective set out by the Commission, funding mechanisms that champion small and community-run networks should be central to the Commission’s policy.

¹ Telecom Notice of Consultation CRTC 2019-406. Available at:
<https://crtc.gc.ca/eng/archive/2019/2019-406.htm>

² Communications Monitoring Report 2019: Retail Fixed Internet Sector and Broadband Availability. Available at:
<https://crtc.gc.ca/eng/publications/reports/policymonitoring/2019/cmr9.htm>

Networks that are built, operated, and used by local communities can and should be supported, where usual market-based solutions do not exist. The broadband funding eligibility criteria should be as inclusive as possible, with a set of principles and a flexible approach that promotes applications by smaller providers in rural and Indigenous communities.

8. **Municipal access to funding:** Municipalities should be able to access funding without having the required three years of experience in deploying and operating broadband infrastructure, or partnering with an internet service provider. Municipalities have on-the-ground expertise in deploying and managing large infrastructure projects, as well as the capacity to identify the needs of citizens. As such, they are well positioned to successfully deploy broadband and should be eligible to receive funding. The current requirements exclude many interested municipalities, which in turn creates further barriers to broadband deployment. Without funding, many municipalities cannot afford to deploy broadband to their wider communities, whereas commercial internet service providers often lack the economic incentive to operate in rural and remote areas.
9. **Funding for application costs:** The current application process is overly burdensome for many groups. The Commission should encourage parties who would not otherwise apply to do so by offering reimbursement for administrative costs incurred during the application process. Eligible parties should include new providers, not-for-profits, municipalities, as well as communities and Indigenous groups. In addition, the Commission should consider offering administrative support during the application process for eligible groups in order to make the process more inclusive. This could be done through the Commission itself, or through a third-party organization.
10. **Option for up-front funding:** For many interested groups, the Commission's current funding restrictions limit their ability to deploy a network. This is because they are unable to secure the needed up-front capital. The Commission should make up-front funding available for approved capital costs in order to encourage groups who may not otherwise have the resources to deploy broadband infrastructure.
11. **Option to apply for operational funding:** In many sparsely-populated areas, it is prohibitively expensive to operate as an internet service provider. In such high-cost serving areas (HCSAs), applicants should be allowed the option to apply for ongoing operational support. The Commission may wish to look to the USA, where the Federal Communications Commission's High Cost/Connect America program offers subsidized operating costs.³
12. **Promote flexible organizational structures:** The Commission should promote innovative geographic configurations of groups working together to provide internet access to citizens. Broadband funding mechanisms should encourage partnerships between groups in disparate geographic regions in order to allow for greater economies of scale. This is particularly relevant where populations in northern and Indigenous communities are spread over large areas. By allowing for organizational flexibility, the Commission will make funding more accessible for smaller carriers

³ Universal Service Administrative Co.: Funds. Available at: <https://www.usac.org/high-cost/funds/>

looking to serve low density, remote communities. The Commission should make explicit that flexible organization structures and partnerships are highly encouraged and will be considered for funding.

13. **Ensure innovative, viable solutions are eligible:** Laying fibre can be prohibitively expensive, particularly in areas of low population density or difficult geographical terrain. The Commission's funding mechanisms should be flexible enough to include innovative technologies such as mesh networking, that rural, remote, and Indigenous communities could use to provide access to their citizens. Ensuring that funding is not overly restrictive may also allow for applicants to consider unconventional solutions, including low Earth orbit (LEO) satellite systems, to serve their communities. It is essential that funding mechanisms are flexible enough to include technologies that communities are able to both deploy and manage.
14. **Develop local technical capacity:** In many areas, especially in northern communities, it is not feasible to have technicians fly in to address infrastructure issues. At the very least, it can be prohibitively expensive, or introduce unreasonable delays, leaving communities without internet access for days or even weeks. To address this, the Commission should include funding opportunities for network operation training within communities. This may take the form of funding in-person or off-site training, or, where possible, support online learning opportunities. It's important that we invest in people, and not just technology.
15. **Improve definitions of "the underserved":** The use of the 25km² hexagonal unit system is problematic, as it is not granular enough. In our original response to the Commission's consultation on the Broadband Funding Regime, Cybera argued against the use of the hexagon system. Innovation, Science and Economic Development Canada's use of geographic hexagons does not take into account the actual population density or distribution of a region, and overstates the coverage by internet service providers. Basing funding eligibility on these boundaries excludes large swaths of the population. "Partially served" areas should be able to provide evidence, such as standardized internet measurements, to demonstrate their needs and therefore prove their eligibility to apply. The Commission should reconsider the use of the current hexagon system in future iterations of the Broadband Fund.

Efficient Access to Existing Infrastructure

16. Meaningful, inclusive access to existing infrastructure is absolutely essential to reach the Commission's universal service objective goals. As identified in this call for comment, efficient access to existing network facilities, especially in underserved regions, is a key aspect of ensuring that no Canadian gets left behind. The Commission has stated that both the creation of new transport infrastructure projects, and access to existing ones, may allow for meeting the universal

service requirements “in underserved areas that would previously have been impossible.”⁴ This position is consistent with previous recommendations by Cybera to champion an open-access network model. Regulation enshrining open access has “the potential to be transformative with respect to competition and affordability. In this sense, affordable access for all, fostering open access infrastructure as a policy objective, should be enshrined in the Telecommunications Act in clear and mandatory language.”⁵ Regulating open access to transport infrastructure at fair rates will allow smaller providers to provide high-quality, affordable access within underserved communities.

17. **Regulate wholesale transport access:** The Commission should reinstate the regulation of access to wholesale transport services, for both fibre-based and ethernet services. The Commission should strongly consider discontinuing its policy of forbearing on rate regulation in situations where regulation is likely to increase broadband access for underserved Canadians. In Cybera’s view, Canadians are no longer served by the Commission’s decisions *not* to regulate wholesale access to transport networks. Telecom Decision 2008-17⁶, and pursuant decisions, have proven ineffective in serving the interest of Canadians, as many rural, remote, and Indigenous residents still lack affordable access to broadband, and are far from the Commission’s universal service objective.
18. In order to overcome this substantial barrier, the Commission should ensure that smaller providers are able to access incumbents’ fibre-based transport networks at just and reasonable rates. This will be particularly helpful in northern communities, where market incentives do not function as well as they do in southern Canada. This recommendation is in line with Cybera’s 2015 comments to the Commission during its review of Review of Basic Telecommunications Services, where we called for the Commission to be proactive in reviewing regulatory processes to achieve its broadband internet target speeds. We specifically called for the Commission to review “availability and rates of wholesale services to ensure competitive access to transport facilities; and tariffs for retail internet services, including subsidies for high-cost serving areas.”⁷ By reinstating rate regulation and removing the barrier to accessing backhaul at fair rates, the Commission will complement its public funding initiatives for universal access.
19. **Require wholesale access for applicants:** At a minimum, the Commission should require that successful applicants for funding provide wholesale access to their network.

⁴ Telecom Notice of Consultation CRTC 2019-406: Call for comments regarding potential barriers to the deployment of broadband-capable networks in underserved areas in Canada. Available at: <https://crtc.gc.ca/eng/archive/2019/2019-406.htm>

⁵ Cybera submission to Innovation, Science and Economic Development Canada Telecommunications Legislative Review. Available at: <https://www.cybera.ca/wp-content/uploads/2019/01/Cybera-Legislative-Review-Submission-1.pdf>

⁶ Telecom Decision CRTC 2008-17: Revised regulatory framework for wholesale services and definition of essential service. Available at: <https://crtc.gc.ca/eng/archive/2008/dt2008-17.htm>

⁷ Cybera submission to CRTC Telecom Notice of Consultation 2015-134: Review of Basic Telecommunications Services. Available at: <https://www.cybera.ca/assets/Publications/CRTC-July14/Cybera-CRTC-2015-134-FinalSubmission.pdf>

20. **Efficient access to dark fibre:** The Commission should revisit its tariff mechanism for dark fibre. Access to affordable layer-2 infrastructure for last-mile providers, at fair prices, will aid in the delivery of services to rural and remote regions.
21. **Dark fibre database:** The Commission should undertake the creation of a database to map out existing dark fibre and/or conduit. Knowing where unused fibre exists will help curb the building of redundant infrastructure. In addition, it will allow for communities to more clearly assess their infrastructure capabilities, and could make possible projects that were previously deemed impossible.
22. **Fund future capacity:** At a minimum, the Commission should prioritize projects that build in future capacity to their networks. Projects that include dark fibre will be more likely to serve the needs of their communities as they evolve.
23. **Consider funding for Internet Exchange Points:** The Commission should include funding mechanisms that allow for the creation and/or maintenance of local Internet Exchange Points (IXPs). These IXPs “help strengthen local internet connectivity, develop local internet industry, improve competitiveness, and serve as a hub for technical activity.”⁸ Cybera believes that the creation of more IXPs will be particularly useful in rural, remote, and northern regions.

Access to Support Structures

24. The inability to efficiently access support structures is a roadblock for many smaller service providers. Regulatory policy that allows for efficient access to existing infrastructure – including support structures – will facilitate the likelihood that the federal government will meet the targets outlined in the 2019 budget: 100% universal high-speed access for Canadians by 2030, no matter where they live.⁹
25. **Launch review of support structure rates:** The Commission should launch a review of large incumbent local exchange carriers’ (ILECs) support structure service rates. In order to fulfill the universal service objective, it is essential that smaller carriers have competitive access – at fair rates – to the poles and conduits of Canadian carriers. In the decade since the last review of these services (Telecom Decision 2010-900¹⁰) enough has changed to warrant a new review.
26. **Review jurisdiction over support structures:** The Commission should request that the federal government launch a review into the appropriate jurisdiction of support structures. While the

⁸ Internet Society: Policy Brief: Internet Exchange Points (IXPs). Available at: <https://www.internetsociety.org/policybriefs/ixps/>

⁹ Government of Canada Budget 2019: Chapter 2: Building a Better Canada. Available at: <https://www.budget.gc.ca/2019/docs/plan/chap-02-en.html>

¹⁰ Telecom Decision CRTC 2010-900: Review of the large incumbent local exchange carriers’ support structure service rates. Available at: <https://crtc.gc.ca/eng/archive/2010/2010-900.htm>

Commission has authority to regulate access to support structures owned by Canadian carriers, or those to which the carrier has been granted the right to access, it does not have jurisdiction to regulate support structures owned by third-parties.¹¹ The inconsistency of access to support structures has resulted in barriers of access to infrastructure that may assist in achieving the universal service objective.

27. Additionally, clarity and consistency around access to support structures would aid in achieving the goals outlined in the federal government’s most recent policy direction issued to the Commission. In this direction, the government called on the Commission to “promote competition, affordability, consumer interests and innovation.”¹² In its recent report, the Broadcasting and Telecommunications Legislative Review Panel also recommended that, in order to promote efficient network deployment,
- a. *The Telecommunications Act should be amended to require those providing electronic communications service to the public to grant access to their support structures at fair and reasonable rates and on a non-exclusive basis to persons who own or operate transmission facilities used to provide connectivity services to the public.*¹³
28. **Enforce current jurisdiction over support structures:** The Commission should, where it has jurisdiction, enforce owners of support structures to publicize the costs to access them. In addition, the Commission should communicate and enforce clear guidelines around fair timelines to access those support structures. By making access rates transparent, smaller providers will be able to make informed decisions about the access and transport infrastructure that is available to them. By enforcing timely access, smaller providers will also be closer to having efficient access to existing infrastructure. This in turn will allow them to conceptualize and implement projects that may not have been possible otherwise.
29. **Funding for support structure access and upgrades:** The Commission should make funding available for the costs of accessing support structures. Where access is available, but upgrades are needed, the broadband fund should allow applicants to apply for needed upgrades to support structures, such as utility poles, conduits, telecom towers, etc.
30. **Support structure database:** The Commission should facilitate the creation of a database to provide information about availability, costs, and needed upgrades to support structures not owned by telecoms.

¹¹ Supreme Court Judgments: Barrie Public Utilities v. Canadian Cable Television Assn. Available at: <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/2060/index.do>

¹² Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives to Promote Competition, Affordability, Consumer Interests and Innovation. Available at <https://laws.justice.gc.ca/eng/regulations/SOR-2019-227/page-1.html>

¹³ Broadcasting and Telecommunications Legislative Review Panel (2020). Final Report - Canada’s Communication Future: Time to Act. Available at: <https://www.ic.gc.ca/eic/site/110.nsf/eng/00012.html>

31. **Mechanism to report support structure problems:** The Commission should make available a transparent mechanism to report issues encountered with support structures, including inability to access a structure, prohibitive costs, and the timeliness of access.
32. **Facilitate “dig once” policies:** The Commission should outline best practices for other levels of government to prioritize “dig once” policies. Support for fibre should be a requirement for all infrastructure projects, especially in rural and remote communities. This will require the Commission to collaborate with infrastructure developers, including governments, utilities, road construction companies, etc, to incentivize them to include fibre infrastructure in their projects.

Spectrum

33. While spectrum licenses are primarily governed by Innovation, Science and Economic Development Canada (ISED), the ability to access spectrum is key to the issues outlined in this proceeding and, as such, should be considered.
34. **Spectrum processes should be more inclusive:** The Commission should call for ISED to make the public spectrum auctioning process more inclusive. The current process for acquiring spectrum licences is overly restrictive and expensive. In many cases, spectrum that could be used to achieve the universal service objective sits unused. Rather than having suitable spectrum available for smaller providers who wish only to serve their local community, it is held back by auction winners who have not deployed it in remote communities. The Commission should call on ISED to review its licensing incentives for unused spectrum in underserved areas.¹⁴ The current licensing framework makes it difficult for municipalities, Indigenous communities, and not-for-profits to participate in auctions.
35. **Spectrum set-aside for Indigenous lands:** The Commission should work with ISED to create a policy for “spectrum set-aside” in Indigenous communities. At minimum, this can be done by setting aside some of the WiFi band spectrum, especially in areas where there is unassigned spectrum. Indigenous people should have first rights to spectrum over their lands. The Commission should look to the USA, where the Federal Communications Commission has created a window for Indigenous groups to apply for spectrum that is being reallocated.¹⁵ Encouraging opportunities for increased spectrum access and rights for Indigenous peoples over their lands will increase the likelihood that these communities are able to achieve broadband solutions that work for them.

¹⁴ Submission by Dr. Gregory Taylor to the Broadcasting and Telecommunications Legislative Review Panel. Available at:
[https://www.ic.gc.ca/eic/site/110.nsf/vwapj/031_UniversityofCalgaryDeptofCommunicationMediaandFilm_12_EN_AB1.pdf/\\$file/031_UniversityofCalgaryDeptofCommunicationMediaandFilm_12_EN_AB1.pdf](https://www.ic.gc.ca/eic/site/110.nsf/vwapj/031_UniversityofCalgaryDeptofCommunicationMediaandFilm_12_EN_AB1.pdf/$file/031_UniversityofCalgaryDeptofCommunicationMediaandFilm_12_EN_AB1.pdf)

¹⁵ Federal Communications Commission: 2.5 GHz Rural Tribal Window. Available at:
<https://www.fcc.gov/25-ghz-rural-tribal-window>

36. **Access to spectrum in rural areas:** The Commission should work with ISED to create a policy to make it easier for rural areas to access spectrum. Where fibre infrastructure is not feasible, applicants may look to constructing fixed wireless networks. 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 telecoms may own spectrum licenses, but are not making use of them. The Commission should urge the Government of Canada to allow for smaller carriers to gain access to low- and mid-band licenses. While some processes exist now for sublicensing, they should be streamlined to make the process more inclusive for smaller providers. The Commission should engage with smaller communities to understand what their spectrum needs are, and work with ISED to institute processes that make it easier for smaller providers to gain access to spectrum in both auctions and secondary markets.

Other Related Issues

37. **Effective regulation of satellite deployment:** The Commission should focus on the public benefit when regulating low-earth orbit (LEO) satellites. In many communities – especially low density and remote areas – citizens are still largely dependent on satellites to access the internet. In the most underserved areas, LEO deployment could provide a transformative solution, but only if effective regulations are in place.
38. **Support Research:** The Commission should increase support for research into the digital divide and the state of connectivity across the country, both in rural and remote areas, as well as for low income Canadians. A more substantive body of research will allow for better policy decisions, and better outcomes for citizens.
39. **Ongoing, meaningful engagement:** The Commission should consider creating a permanent body for Indigenous engagement on telecommunications. Policy makers can look to the USA, and the Federal Communications Commission's Office of Native Affairs and Policy. A more permanent body may allow for more consistent engagement on policy that affects Indigenous peoples throughout Canada.

Conclusion

40. Cybera thanks the Canadian Radio-Television and Telecommunications Commission for the opportunity to provide comments on this issue, and we welcome the opportunity to intervene in further follow-on proceedings. Cybera represents more than 100 member organizations in Alberta, including post-secondary institutions, K-12 school districts, libraries, and municipalities, and is a partner in Canada's National Research and Education Network (NREN). We operate a publicly-funded, ultra-high-speed network that connects researchers, entrepreneurs, students and Albertans to each other and to the wider world. As such, we are well positioned to provide insight on

the connectivity needs of Canadians, while balancing the technical challenges of deploying broadband-capable networks in underserved areas.

End of document