# 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

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# Submission of the First Mile Connectivity Consortium

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## Executive Summary

E1. The First Mile Connectivity Consortium (FMCC) is an incorporated independent not-for-profit national association. Our members are First Nations Internet service providers known as "community/regional intermediary organizations." Our work focuses on innovative solutions to digital infrastructure and services in rural and remote regions and communities across Canada.

E2. We recognize that digital services are essential for the social, cultural, and economic development of rural and remote Indigenous communities and their residents. It is important to recognize the essential role that Indigenous and non-profit telecom providers can play in providing these services in rural and remote communities.

E3. Unlike large commercial Telecommunication Service Providers (TSPs), non-profit and Indigenous organizations exist to serve the needs of their communities. FMCC partner organizations represent an alternative approach that foregrounds sustainable local and regional enterprise development in the delivery of broadband infrastructure and services in rural and remote regions. Indigenous service providers from across Canada have innovated to develop and implement modern networks supporting digital infrastructure and services.

E4. This submission details the barriers these organizations face, including, but not limited to, access to required transport services and efficient access to support structures. We also note challenges related to spectrum and satellites, which, although primarily under the jurisdiction of ISED, play an essential role in providing transport infrastructure in these regions.

**Based on this analysis, we make the following recommendations**:

**Covid-19:**

E5. In response to the Covid-19 pandemic, the federal government (including the CRTC) should establish an emergency fund specifically for the non-profit and Indigenous telecom providers that have been working to connect their communities.

**Transport Networks:**

E6. Service providers must be required to provide wholesale access to their networks as a condition for funding from the Broadband Fund.

E7. The Commission and ISED should provide clear definitions of the conditions required for Open Access to Transport Services.

E8. Pricing for transport services, particularly those supported by public funds (e.g. ISED funding programs or the Commission's Broadband Fund), should be regulated to ensure fair access.

E9. If a recipient of public funding wants to provide special discretionary pricing, for example to providers of public services such as education, it should be enabled to do so, provided that the rate does not exceed the amount specified in the dedicated service offerings. For any other third-party entities, pricing should be offered as specified in the dedicated broadband service price schedule.

E10. Large incumbent TSPs that are building transport infrastructure using public funds, including the CRTC's Broadband Fund, should be required to offer 1 GB or 10 GB service to third-party organizations.

E11. Transport services requested by third-party providers must be provided by incumbents in a timely manner. Incumbents should be penalized for unreasonable delays.

E12. To support the Commission's broadband goals and long-term needs for adequate broadband infrastructure, recipients of public funds should be required to install enough transport capacity and path diversity to meet projected demand and network redundancy requirements over at least 10 years.

E13. Fibre networks built using public funds should also be designed to include additional capacity in the form of "dark fibre" that may be leased and activated in the future.

E14. The Commission should determine whether 'open access' requirements include dark fibre.

E15. To take advantage of existing transport capacity, the CRTC should undertake a mapping exercise to highlight available existing dark fibre and/or conduit.

E16. Dark fibre should be made an eligible expense for the Broadband Fund.

E17. The Broadband Fund should allow proposals for satellite-served communities to transition to fibre infrastructure.

E18. The cost of building and accessing Internet Exchange Points (IXPs) should be made an eligible expense in rural, remote and Northern regions.

E19. Sole-sourced contracts that use local assets should be made an allowable cost in projects supported by the Broadband Fund.

E20. The Commission should publish details concerning how oversight of funded transport projects will be carried out, and how compliance will be enforced. These details should include specific annual reporting requirements for Indigenous contexts (as is required by the FCC).

**Support Structures:**

E21. We agree with the Broadcasting and Telecommunications Legislative Review (BTLR) Panel's proposed changes to the *Telecommunications Act* concerning support structures. Meanwhile, we also urge the Commission to explore waivers or other means to extend its jurisdiction over support structures owned by third parties including provincial governments.

E22. Given their essential role as a component of these networks, information regarding the support structures owned by entities other than telecommunications carriers should be included in a publicly available database provided by the CRTC.

E23. The Commission should make available adequate funding through the Broadband Fund to cover the total costs of access to all support structures, including the elements listed above.

E24. Where the CRTC has jurisdiction, it should specify deadlines for owners of support structures to provide information on costs of access to assets and other related costs. It should also urge other third-party owners to abide by these deadlines.

E25. Where the Commission has jurisdiction, it should enforce timely issuance of access permits by support structure owners. It should also urge other third-party owners to abide by these deadlines.

E26. The Broadband Fund should allow supplemental funding in cases where funded projects must absorb additional costs, such as access to support structures, due to circumstances beyond their control.

E27. The Commission should put in place a clear process that third-party organizations can use to report problems and request remedies concerning access to support structures.

E28. The CRTC should consider instating a 'dig once' policy in collaboration with other infrastructure developers, such as governments, utility companies, and road builders.

**Other Related Issues**

E29. Specific language concerning Indigenous land and treaty rights and procedures required to access land, "passive infrastructure" such as rights of way, poles, and ducts, as well as other telecommunications equipment, should be included in any updated regulations concerning support structures.

E30. CRTC regulations should state that the Commission does not have the right to approve construction of transmission lines on Tribal or other Indigenous lands without the consent of the relevant Indigenous government.

E31. In the spirit of reconciliation, meaningful consultation and informed consent, agreements must be reviewed and modernized with respect to access to support structures and rights-of-way.

E32. We recommend that in lieu of letters of credit, Indigenous non-profit organizations be allowed to provide examples of their successful development and operation of similar infrastructure projects. Examples could include projects such as electrification, water and wastewater, roads, airports, and so on.

E33. We also recommend that the CRTC brief third parties such as ISED, INAC, the Business Development Bank of Canada, and the Infrastructure Bank of Canada on the Broadband Fund, and explore with them how Indigenous communications providers could qualify for their support.

E34. In High-Cost Serving Areas (HCSAs), for non-profit and Indigenous service providers, operating costs that exceed projected revenues for broadband services should be considered eligible expenses for applications to the Broadband Fund.

**Spectrum and Satellites**

E35. The Broadband Fund and ISED should recognize the need to ensure a more inclusive approach to the distribution of spectrum licenses that reflects the diversity of providers.

E36. ISED should set aside portions of appropriate spectrum for fixed wireless for use by Indigenous communities through a program similar to that employed by the FCC.

E37. Following past practice, an amount of reserve capacity on LEO satellite systems could be provided for Public Benefit, as a means for cooperative and non-profit broadband service providers to provide connectivity services to their communities.

E38. We recommend that ISED and the CRTC hold additional consultations with respect to licensing conditions for LEO satellite systems, with a specific focus on Public Benefit requirements that could be included as terms of these licenses.

# Introduction

## General Comments

1. The First Mile Connectivity Consortium (FMCC) is an incorporated independent not-for-profit national association. Our members are First Nations Internet service providers known as "community/regional intermediary organizations." Our associate members are university and private sector researchers and others interested in Indigenous and community communications and telecommunication services for the public good. Our work focuses on innovative solutions to digital infrastructure and services with and in rural and remote regions and communities across Canada. More details about our members and activities is available: http://firstmile.ca

2. Digital services are essential for the social, cultural, and economic development of rural and remote Indigenous communities and their residents.[1] Under the *Telecommunications Act*, Canada's telecommunication policy includes the objective "to render reliable and affordable telecommunications services of high quality accessible to Canadians."[2] However, there is a paradox in the development and delivery of communications services in rural and remote regions: communities with the worst transportation links and greatest needs (due to a lack of 'brick and mortar' services) often have the worst access, lowest quality of service, and most expensive communications services.[3] This condition is largely due to market failure, since populations in remote regions may be too small and distances too great to generate the levels of revenue and earnings required by commercial communications companies.

3. While the major telecommunications companies deliver reliable services to most urban Canadians, it is also important to recognize the essential role that Indigenous and non-profit telecom providers play in rural and remote communities. The regions in which they operate have always represented a challenging business case – there is little profit to be made by commercial telecommunications companies in small remote and rural communities.

4. Most First Nations territories and other remote regions are served by major incumbent telecommunications service providers (TSPs). We note that the 2020 report of the Broadcasting and Telecommunications Legislative Review Panel (BTLR Panel) found that in 2017, the profit margins for Canadian telecommunications providers were 37 percent for wireline service and 39.5 percent for wireless service. As stated in the report: "By this measure, the telecommunications industry in Canada is more than 2.5 times more profitable than other industries" (p.80).[4]

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[1] Research contracted by Industry Canada/ISED, see: http://firstmile.ca/wp-content/uploads/2016-ISED-FMCC.pdf

[2] *Telecommunications Act*, Section 7(b).

[3] See: http://www.northernpublicaffairs.ca/index/volume-6-special-issue-2-connectivity-in-northern-indigenous-communities/a-whole-community-approach-for-sustainable-digital-infrastructure-in-remote-and-northern-first-nations/

[4] 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

5. Despite their large profit margins, these companies have typically only installed or upgraded facilities in rural and remote regions if their costs were subsidized by public funds. Despite regulatory obligations and access to government funding, too often these projects have been only partially completed or proved to be inadequate, particularly when hardware and software upgrades and improvements are required.

6. Faced with this challenge, FMCC partner organizations represent an alternative approach that positions sustainable local and regional enterprise development at the forefront of broadband infrastructure and services in rural and remote regions. Indigenous service providers from across Canada have innovated to develop and implement modern systems supporting digital infrastructure and services.[5] First Nation organizations and regional networks, including FMCC member organizations, provide services to both institutions (e.g. health and education), households, small businesses and entrepreneurs. These organizations utilize a "whole community approach" that frames broadband as an ecosystem of: 1) residents and households; 2) community institutions ("anchor tenants" including health centres, schools, businesses, etc.); and 3) regional telecommunications transport infrastructure connecting multiple communities. This approach recognizes the goal of sustainability of infrastructure and services in these regions and communities.[6]

7. Residents of rural, remote, Northern and Indigenous communities should not be restricted to act only as consumers of infrastructure and services – they can also act as producers, owners, and operators. FMCC believes that these populations must have opportunities to utilize digital communications infrastructure and services not just as an enabler of economic development in other industries and services, but also as a locally-owned and managed resource in and of itself.

8. Unlike large commercial TSPs, non-profit and Indigenous organizations exist to serve the needs of their communities. They therefore need access to resources to build and operate the infrastructure that can provide the required bandwidth and quality of service to their communities. They also need to be able to conduct their work in an environment free of unnecessary barriers to building new facilities or interconnecting existing facilities. As we point out below, the existing regulatory framework does not provide adequate certainty for these organizations with respect to the areas identified in this Notice, including, but not limited to, access to required transport services and efficient access to support structures.

9. We welcome the Commission's increasing recognition of and regulatory support for telecommunications infrastructure and services in rural, remote, Northern and Indigenous regions, including the outcomes of various proceedings in which we have participated, particularly CRTC 2015-135 (Review of Basic Telecommunications Services) and CRTC 2017-112 (Development of the Commission's Broadband Funding Regime).

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[5] For an overview of projects, see: http://firstmile.ca/wp-content/uploads/Stories-from-the-First-MIle-2018.pdf

[6] See: http://www.northernpublicaffairs.ca/index/volume-6-special-issue-2-connectivity-in-northern-indigenous-communities/a-whole-community-approach-for-sustainable-digital-infrastructure-in-remote-and-northern-first-nations/

10. As the result of these and other decisions by the Commission, we are pleased to point out that the following FMCC member organizations are applying to the Commission's Broadband Fund:

    a. Clear Sky Connections (MB)
    b. K-Net Services (ON)
    c. Matawa First Nations Management (ON)
    d. Western James Bay Telecommunications Network (ON)
    e. First Nations Education Council (QC)

11. However, these and other FMCC member organizations, and other small service providers, continue to face significant barriers to the deployment, operation and sustainability of telecommunications facilities and services.

12. The FMCC files these comments to highlight the barriers that these service providers face in building new facilities or interconnecting to or accessing existing facilities. We also provide recommendations for regulatory measures that aim to address these issues.

13. Finally, because of the important role that both spectrum and satellite systems play in connecting rural and remote communities, we include proposals regarding the licensing of those resources. We believe it is important that the Commission and ISED are aware of these recommendations in order to facilitate a comprehensive and integrated policy framework to support the deployment and sustainability of telecommunications infrastructure and services to all Canadians, including those living in remote, Northern and Indigenous regions.

**Covid-19: Additional Challenges**

14. As well, we point to additional challenges faced by rural and remote communities and their telecommunications organizations during the COVID-19 pandemic, which further underscore the importance of the Commission's ruling on broadband as an essential service. More and more activities are moving online as people scramble to obtain critical safety information, access health care and education, work remotely, and stay in touch to check on family and friends. Broadband connectivity has become a critical lifeline for communities during the pandemic.

15. First Nations in rural and remote regions of the country know these challenges well. They have long been aware of the importance of adequate, affordable access to internet services for individuals and organizations, and so over the years, have set up their own technology organizations, built local and regional broadband infrastructure and trained local technical expertise. Their work is increasingly important as more services move online during the pandemic. At the same time, these communities remain among the most vulnerable in the country as underlying health conditions put many community residents at high risk to contract the virus. As such, the communities are even more isolated than usual and rely more heavily on digital networks.

16. At the time of writing, people in the remote James Bay coast are struggling to connect with each other and to receive updated health information. In fly-in communities such as Kashechewan and Fort Albany, there is no cellular service. Limited bandwidth is now carefully rationed between households and the few public services, such as health clinics, that remain open.

17. But thanks to the efforts of the non-profit Western James Bay Telecommunications Network (WJBTN), people can still access essential online services. However, that network, and those operated by other Indigenous service providers, face frequent and numerous challenges.

18. Similar conditions exist in the remote Matawa First Nations of Marten Falls, Eabametoong, Neskantaga, Webequie and Nibinamik. There, Matawa First Nations Management has started deploying an 800-kilometre fibre-optic network. But until construction is complete, communities are dependent on heavily oversubscribed satellite links. People cannot access real-time applications that support telemedicine, distance learning and telework.

19. In these and other Indigenous communities, the COVID-19 pandemic is exposing long-standing disparities, as exploding data traffic puts increased strain on already-burdened local and transport networks. Yet Indigenous providers must compete with massive telecommunications corporations for limited funding to support the deployment and operations of services in their territories, even though the corporations earn billions in annual revenues and can spread their operating costs across a subscriber base counted in the millions.

20. High rates charged by commercial internet service providers are further exacerbated, compounding the burden on economically marginalized individuals and communities. Due to travel restrictions, the limited availability of local technicians constrains the ability of telecommunications companies to repair damaged networks. This situation underscores arguments to increase local ownership and capacity for community networks. Furthermore, as more people move their activities online, vulnerable groups are being increasingly targeted by online scams and misinformation, highlighting the importance of appropriate digital literacy.

21. **RECOMMENDATION: In response to the Covid-19 pandemic, the federal government (including the CRTC) should establish an emergency fund specifically for the non-profit and Indigenous telecom providers that have been working to connect their communities.**

## Part 1: Comments on Access to Affordable Transport Services

22. In the sections below we provide comments which focus on specific barriers that FMCC member organizations face in accessing Transport Services from incumbent telecommunications service providers.

23. In proposing solutions to these barriers, we agree with the BTLR Panel's calls for a holistic approach to the regulatory framework guiding access to wholesale transport services. In particularly we highlight the Panel's Recommendation 31, which states that:

> "[T]he CRTC's authority over tariffing be consolidated, specifying that tariffs (to be renamed "reference offers") must set out not only rates but also, at a minimum:
>
> i. Required terms and conditions;
> ii. Details of associated operational processes; and
> iii. Service supply and quality conditions."[7] (p.87).

**1.1. Wholesale Access**

24. FMCC member organizations face a number of challenges in accessing transport services from commercial telecommunications providers (TSPs). These challenges are reflected in the attempts by TSPs to limit regulatory requirements to provide wholesale access in the rural, remote, Northern and Indigenous regions where FMCC member organizations operate.

25. For example, on a number of occasions Northwestel has argued that it should not be required to share its transport infrastructure with third-party providers such as FMCC member organizations. In their November 2018 submission to the *Standing Committee on Indigenous and Northern Affairs: Northern Infrastructure Projects and Strategies*, the company stated that:

> "Improving broadband is not as simple as laying more fibre, increasing competition or forcing prices lower, improving connectivity in Canada's remote north will require collaborative solutions that encompass the complexity of the region. Distance, geographic challenges, high input costs and low populations densities make it challenging to find a business case where telecommunications service providers can recover their investments. *This challenging business case is made significantly more adverse by structural mechanisms that drive market conditions. An example is the requirement to provide wholesale access. Different from most southern jurisdictions, there is simply not enough revenue from local services to support one service provider let alone two or more in most communities and forced competition or facilities access directly impacts private sector investment*". [8] (p.5, emphasis added).

26. In that same submission, Northwestel went on to make the recommendation that: "The Government should abandon the obligation for subsidy recipients in Canada's remote North to offer Wholesale Access and instead promote affordability through retail price commitments" (p.6).

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[7] 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

[8] Northwestel (2018). Presentation to Standing Committee on Indigenous and Northern Affairs: Northern Infrastructure Projects and Strategies. Available at: https://www.ourcommons.ca/Content/Committee/421/INAN/Brief/BR10235746/br-external/NorthwesTel-e.pdf

27. A similar argument was made by Northwestel's parent company, Bell Canada, in its January 2018 submission to the Standing Committee on Industry, Science and Technology on matters related to broadband connectivity in rural Canada. In that submission, Bell Canada recommended that government should "not mandate access to subsidized networks", and stated that:

> "While the vast majority of Canadians benefit from world-class broadband networks built by a robust and competitive industry, some communities are not economically feasible for broadband providers to serve on a private model. *Currently, this is exacerbated by mandated wholesale access policies that increase the cost to invest, particularly in some rural areas. Removing wholesale access requirements would reduce the number of communities in need of public funding for network infrastructure projects.*" (p.1, emphasis added).
>
> Bell Canada made a formal recommendation to the Standing Committee: "Do not mandate wholesale access on subsidized networks," stating:
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> "While we recognize that broadband funding programs have historically required wholesale access as a condition of receiving subsidies, we urge the Government to abandon this obligation. *Mandating wholesale access drives up the cost of the subsidy required, discourages bids, forecloses investment, and delays the extension of broadband to communities in need of digital infrastructure*" (p.10, *emphasis added*).[9]

28. These requests come after that same company was awarded $49.9 million in public funds in September 2017, as part of the federal government's Connect to Innovate program.[10] We point out the BTLR Panel's statement that "approximately half the increase in connectivity from 2014-2018 was due to public sector funding" (p.73). Furthermore, we note the panel's finding, stated above (para 6), concerning the high profitability of the telecommunications sector, including Northwestel's parent company Bell Canada.

29. We also disagree with Northwestel's recommendation to government that it not be required to share its publicly-funded infrastructure with other parties. A core policy objective noted in section 7c of the *Telecommunications Act* is "to enhance the efficiency and competitiveness, at the national and international levels, of Canadian telecommunications". Removing the regulatory requirement that allows third-party organizations such as FMCC member organizations to access transport services will clearly reduce competition in these communities and regions.

30. **RECOMMENDATION: Service providers must be required to provide wholesale access to their networks as a condition for funding from the Broadband Fund.**

    We discuss specific conditions in the sections below.

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[9] Bell Canada (2018). Submission to study of Broadband connectivity in Rural Canada. Available at: www.ourcommons.ca/Content/Committee/421/INDU/Brief/BR9618876/br-external/BellCanada-e.pdf

[10] See: https://www.cbc.ca/news/canada/north/connect-to-innovate-northwestel-internet-nunavut-1.4289747

## 1.2. Open Access:

### Definitions

31. Given that Open Access to Transport Services is a key focus of this proceeding, we believe that this concept should be more clearly defined by the Commission and other relevant parties such as ISED.

32. In FMCC's comments submitted to TNC 2019-45,[11] we noted that in existing documentation from ISED and the CRTC, this concept is unclear. For example:

    a. Open access (wholesale): "applicants will not be required to commit to any additional wholesale open access obligations other than existing regulatory obligations, such as wholesale high-speed access services, with respect to the [local] access portion of a proposed project." [12] (Telecom Regulatory Policy CRTC 2018-377, para 193).

    b. Open access (retail): "applicants should be required to commit to offering retail open access to transport infrastructure… [T]o be eligible for funding…an applicant that proposes a project to build or upgrade transport infrastructure must commit to providing retail open access to that infrastructure." (para 203).

33. We also note the BTLR Panel's statement that:

> "[W]holesale tariffs have become unduly focused on rates, *with insufficient emphasis on the terms and conditions of service that are critical to the feasibility of using the wholesale input. Specifying these terms and conditions is an important element in establishing wholesale rates.*"[13] (p.86, *emphasis added*).

34. **RECOMMENDATION: The Commission and ISED should provide clear definitions of the conditions required for Open Access to Transport Services.**

### Pricing

35. Concerning pricing, we note that Open Access pricing as defined by ISED stipulates that a recipient of ISED funding shall provide dedicated broadband services to project sites of other service providers in a fair, transparent, timely and non-discriminatory manner. The recipient will ensure that it will be able to accommodate any reasonable requests for dedicated

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[11] First Mile Connectivity Consortium (2019). *Telecom Notice of Consultation CRTC 2019-45: Call for comments – Application Guide for the Broadband Fund, Submission of the First Mile Connectivity Consortium* (March 18, 2019).

[12] Telecom Regulatory Policy CRTC 2018-377, Ottawa, 27 September 2018.

[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

broadband services from other service providers or clients, based on the recipient's calculations of its own capacity requirements.[14]

36. We also point out that if access to transport services is unreasonably expensive, it effectively eliminates access by third parties, and/or makes their services prohibitively expensive for users. There are examples of transport infrastructure in remote regions that is ostensibly open access, but reflects high prices that effectively exclude use by any other provider.

37. For example, in 2016, after reviewing high-speed access rates for Bell Canada, Bell MST, Cogeco, Eastlink, RCCI, SaskTel, Shaw, TCI, and Videotron, the Commission found proposed wholesale high-speed access rates "unreasonable".[15] The Commission therefore reduced the proposed interim transport component rate for a number of companies by up to 89 percent, and reduced proposed interim access component rates of certain companies by up to 39 percent. As stated in a Press Release by former CRTC Chairman Jean-Pierre Blais:

> "Competitors that provide retail Internet services to Canadians using wholesale high-speed services must have access to these services at just and reasonable prices. The fact that these large companies did not respect accepted costing principles and methodologies is very disturbing. What's even more concerning is the fact that Canadians' access to a choice of broadband Internet services would have been at stake had we not revised these rates. As always, we strive to create a dynamic competitive telecommunications market for Canadians."[16]

38. Subsequent to that ruling, the CRTC set final rates for aggregated wholesale high-speed access services in Telecom Order CRTC 2019-288.[17]

39. Challenges also exist in the northern territories. For example, consider Northwestel's 2017 request to the CRTC for forbearance from the regulation of the Wholesale Connect Service in communities served by the Mackenzie Valley Fibre Link. At that time, FMCC noted our concerns that lack of pricing regulation could limit the accessibility and affordability of such wholesale bandwidth services for communities and community-based ISPs operating in the Mackenzie Valley over the long term.[18] In *Telecom Decision 2017*-300, the CRTC denied Northwestel's request for forbearance.[19]

**40. RECOMMENDATION: Pricing for transport services, particularly those supported by public funds (e.g. ISED funding programs or the Commission's Broadband Fund), should be regulated to ensure fair access.**

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[14] See ISED (2018). *Connect to Innovate: Statement of Work* (Schedule A, Section 5).

[15] See: https://www.canada.ca/en/radio-television-telecommunications/news/2016/10/crtc-finds-proposed-wholesale-high-speed-access-rates-unreasonable.html

[16] See: https://www.canada.ca/en/radio-television-telecommunications/news/2016/10/crtc-finds-proposed-wholesale-high-speed-access-rates-unreasonable.html

[17] See: https://crtc.gc.ca/eng/archive/2019/2019-288.htm

[18] See: http://firstmile.ca/wp-content/uploads/FMCC-CRTC-NWTel-Forbearance-Letter-Mar9.pdf

[19] See: https://crtc.gc.ca/eng/archive/2017/2017-300.pdf

41. **RECOMMENDATION: If a recipient of public funding wants to provide special discretionary pricing, for example to providers of public services such as education, it can do so, provided that the rate does not exceed the amount specified in the dedicated service offerings. For any other third-party entities, the pricing should be offered as specified in the dedicated broadband service price schedule**.

**Tiers of Service**

**42.** The Commission should re-examine the tiers of Open Access transport services that must be provided by funded projects. For example, the Broadband Fund Guide notes that applicants must provide open access to one of three tiers of service: 100 MB, 1 GB, or 10 GB. However, in their service offerings incumbents sometimes only provide access to the lowest of the three options: 100 MB. This significantly limits the ability of third-party providers to access adequate transport capacity, and limits end-user access to bandwidth.

**43. RECOMMENDATION: Large incumbent TSPs that are building transport infrastructure using public funds, including the CRTC's Broadband Fund, should be required to offer 1 GB or 10 GB service to third party organizations.**

**44.** In recognition of their small size and limited ability to provide additional Open Access services to third-parties, non-profit, community-based and Indigenous providers should be allowed to apply for an exception to the above rule. This category of smaller providers should be allowed to offer 100 MB tier of service offerings.

### 1.3. Timeliness

45. At present, incumbents can take a significant amount of time to provide FMCC members and others with access to their transport services. For example:

- In Manitoba, the major TSP (Bell/MTS) requires an internal engineering report before it will allow third-party organizations to access wholesale transport services. This report can take up to six (6) months for Bell/MTS to complete. This time delay significantly impacts funding and project cycles that FMCC member organizations require in order to develop and deploy their infrastructure, particularly in northern and remote regions with a short construction season.

- In Ontario, Bell often took more than two years to provide access to various circuits requested by K-Net.

**46. RECOMMENDATION: Transport services requested by third-party providers must be provided by incumbents in a timely manner. Incumbents should be penalized for unreasonable delays.**

### 1.4. Sufficient Bandwidth for Growth

47. The Commission should require incumbents to provide adequate transport services as a condition for accessing public funding/funding, and monitor that condition.

48. As in urban areas, demand for broadband has grown dramatically in rural/remote regions, and is expected to continue with adoption of bandwidth-intensive applications and services. Yet in some cases, incumbents claim that only limited capacity for transport services is available for purchase by third party providers.

49. For example, in 2010, Bell Canada received funding from ISED and other federal and provincial funding programs to roll out fibre transport to 20 remote First Nations in Northern Ontario. This 2010-2015 infrastructure build was to replace Bell's outdated and inadequate microwave and satellite telecom facilities connecting these communities. However, their project left several communities in the Mattawa region unserved. Now, these communities require adequate bandwidth to deliver on the required 50/10Mb connectivity, only to be informed that Bell Canada is unable to deliver this service without obtaining millions of dollars of additional government funding to upgrade their network.

50. After only five years of service, Bell now claims that this transport network has no remaining capacity (that it is over-subscribed). Recent requests by First Nations accessing the Bell fibre transport to deliver a 10 Gbps circuit to the community networks were met with similar responses from Bell that additional funding is required for a multi-million dollar upgrade to the Bell transport network to deliver this required service. Bell is now requesting an additional $10-12 million in public funding to build additional fibre transport networks. This situation has resulted in limitations in the amount of transport capacity that Indigenous and non-profit service providers, and communities, can access.

51. Of equal importance, this lack of capacity limits the ability of the First Nations communities to access geographically diverse routes to the upstream Internet and multi-homed Internet services and networks. Without this path diversity, the Matawa First Nations Management network will face challenges to its ability to automatically recover from damage to the fiber-optic cable. Depending upon the time of year, without redundancy systems in place, it could take three days or even longer to restore service.

**52. RECOMMENDATION: To support the Commission's broadband goals and long-term needs for adequate broadband infrastructure, recipients of public funds should be required to install enough transport capacity and path diversity to meet projected demand and network redundancy requirements over at least 10 years.**

### 1.5. Dark Fibre

53. As noted, transport projects should be built with future capacity needs in mind. For example, optical fibre projects can include additional strands of "dark fibre" for future use.

**54. RECOMMENDATION: Fibre networks built using public funds should be required to include additional capacity in the form of "dark fibre" that may be leased and activated in the future.**

55. FMCC members have found that in some cases where dark fibre exists, some incumbents refuse to allow third-party access to it.

**56. RECOMMENDATION: The Commission should determine whether 'Open Access' requirements include dark fibre.**

57. Availability of "dark fibre" should be made more transparent to third-party providers. This information can help ensure that existing assets are utilized and funds are spent in a cost-effective manner.

58. Without knowledge of the owners of the upstream fiber optic networks, route locations, and names of lessors of dark strands of fiber or lightwaves turned up on fibers inside the cable sheath, it is entirely possible for a local service provider to lease dark fiber in a cable sheath, as well as to lease dark fiber from another third party in order to have a diverse upstream route to maximize reliability, only to learn later that it has in fact leased two pairs of fiber in the exact same route but from two different owners. The result is that the local provider has no route diversity or upstream connectivity to prevent outages.

59. A 2015 study conducted in the U.S. describes a project that mapped conduit (rather than dark fibre), which provides one methodology that might be used. As noted by the authors:

> "The steps we take in the mapping process are as follows:
>
> (1) we create an initial map by using publicly available fiber maps from tier-1 ISPs and major cable providers which contain explicit geocoded information about long-haul link locations;
>
> (2) we validate these link locations and infer whether fiber conduits are shared by using a variety of public records documents such as utility right-of-way information;
>
> (3) we add links from publicly available ISP fiber maps (both tier- 1 and major providers) which have geographic information about link endpoints, but which do not have explicit information about geographic pathways of fiber links; and
>
> (4) we again employ a variety of public records to infer the geographic locations of this latter set of links added to the map (pp.2-3).[20]

60. The authors note that recommendation 6.4 made by the FCC in its *National Broadband Plan* stated that "the FCC should improve the collection and availability regarding the location and availability of poles, ducts, conduits, and rights-of-way." [21] (p.5).

[20] See: http://pages.cs.wisc.edu/~pb/tubes_final.pdf

[21] See: https://www.fcc.gov/general/national-broadband-plan

**61. RECOMMENDATION: To take advantage of existing transport capacity, the CRTC should undertake a mapping exercise to highlight available existing dark fibre and/or conduit.**

62. The existing CRTC Broadband Fund does not currently provide funding to lease or purchase dark fibre (physical asset) / dark waves (capacity on fibre networks).

**63. RECOMMENDATION: Dark fibre should be made an eligible expense for the Broadband Fund.**

### 1.6. Transition from Satellite to Fibre

64. At present, the Broadband Fund only supports projects involving satellite-served communities to upgrade satellite infrastructure and services. While satellites will still be useful to serve extremely remote locations and temporary camps and settlements, FMCC remains unconvinced that satellites will provide adequate capacity to meet the bandwidth needs of most Indigenous and remote communities.

65. Publicly available estimates of satellite capacity suggest that the planned constellations of about 300 Low-Earth Orbital (LEO) satellites will provide multiple Terabits of global coverage by dynamically allocating bandwidth.[22] However, on the ground, there is simply not enough capacity to serve the needs of rural/remote communities. For example, in Manitoba the local Internet Exchange Point (IXP) currently has 270 GB of connected port capacity.[23] When that capacity is considered with respect to bandwidth needs for areas including health, education and economic development, it is clear that LEO satellites will not address the needs of communities and more bandwidth will be required.

66. The level of security of LEO satellite transmission (encrypted data and encrypted VPN) also remains unclear. Increased security will require increased bandwidth – further highlighting the limitations of satellites.

67. We also note that the commercial viability of some LEO networks is precarious. For example, OneWeb, which had already invested in a base station in Inuvik, has declared bankruptcy.[24]

68. There are several examples of successful initiatives that have upgraded satellite networks to fibre networks. For example, the Tamaani Network in Nunavik, Quebec has successfully begun the transition from C-Band satellite to fibre transport network infrastructure.[25] As noted on the Tamaani website:

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[22] See:https://www.telesat.com/sites/default/files/telesat/LEO/New_LEO_Brochures/leo_brochure_2020_stacked_0.pdf

[23] See: http://www.mbix.ca/peers/

[24] See https://www.wired.com/story/spacex-competitor-oneweb-is-reportedly-bankrupt/

[25] See: https://nunatsiaq.com/stories/article/krg-looks-at-laying-fibre-optic-network-in-nunavik-this-summer/

"Fiber optic broadband opens up endless possibilities for the future of Nunavimmiut. This service is now available in Kuujjuaq and Inukjuak, coming soon to Salluit, and Puvirnituq, creating the most modern Internet infrastructure available today for Nunavik."[26]

69. **RECOMMENDATION: The Broadband Fund should allow proposals for satellite-served communities to transition to fibre infrastructure.**

### 1.7. Internet Exchange Points (IXPs)

**70.** At present it is very expensive for providers located in the northern territories and the northern and rural/remote regions of provinces to access IXP facilities. Locating more IXPs in the North would result in significant cost savings, as well as provide environmental benefits and better energy efficiency.[27]

71. Iqaluit-based organizations Nuvujaq Inc. and Nunageek Solutions Inc., along with the Canadian Internet Registration Authority (CIRA), and the Internet Society, are already involved in setting up IXP facilities in Northern Canada through the *Arctic IX* project.[28] As noted on the project's website:

> "**The Problem:** Internet in the North is very costly and for many communities, comes via satellite. Most networks (Northwestel/Bell, federal and territorial governments, Telesat, Ice Wireless, SSI Micro, Yukon College) do not interconnect locally so all traffic between them goes down south and back again. Internet, particularly satellite, is too expensive and slow to waste.
>
> **The Solution:** Let's start having networks in the North connect directly with each other at 'Internet Exchange Points' (IXPs). The Arctic Internet Exchange (ArcticIX) has been formed with the sole intention of bringing Internet Service Providers (ISPs), government and educational institutions in the North closer together. By doing so, we can strengthen the Internet community while providing mutually beneficial and free public peering points for all local Internet traffic.
>
> By simply connecting, ArcticIX will enable a platform for high bandwidth, low latency websites and applications in any community with an IXP."[29]

72. These facilities could be supported through the Broadband Fund by making costs associated with building IXPs in rural, remote and Northern regions an eligible expense.

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[26] See: http://tamaani.ca/about/

[27] For example, a recent article from CBC makes a case for ways to reduce energy consumption exacerbated by the distance between the servers for entities like Netflix and Amazon Prime and the end user.See: https://www.cbc.ca/news/technology/data-centres-energy-consumption-1.5391269

[28] See: https://www.cira.ca/blog/state-internet/building-not-just-bringing-internet-iqaluit

[29] See: https://arcticix.ca/

**73. RECOMMENDATION: The cost of building and accessing Internet Exchange Points (IXPs) should be made an eligible expense in rural, remote and Northern regions.**

### 1.8. Local Sole-Source Contractors

74. Organizations based in rural, remote, Northern and Indigenous communities face limited choice of contractors who can install and/or maintain support structures in remote communities with limited access to equipment (e.g. bucket trucks) and people (e.g. construction workers). However, some rules and regulations require users to utilize contractors chosen or certified by owners – often at much higher rates than local contractors sourced by non-owners.

**75.** In remote, fly-in regions such as the west coast of James Bay, there are cases where the engineering company which built the fibre optic network has the greatest familiarity with the infrastructure, climate, people and resources. For example, rather than tendering out the Project Management piece to an entity unfamiliar with the obstacles involved in working in the region, WJBTN was able to make the case to the funder to give consent to a non-competitive procurement of over $25,000 if details of urgency, special expertise, confidentiality, savings or other circumstances warrant it. Specifically, in this situation, the case was made for sole-sourcing on the grounds of special expertise and savings. The engineering company was willing to mobilize and remain in the community for a longer length of time before demobilization due to the company's special expertise in the communities. This saved thousands of dollars in air travel to and from the region.

76. Sole source contracts that use assets (people and equipment) in these communities can also support jobs and lower costs such as transportation to bring in external people and equipment.

77. **RECOMMENDATION: Sole-sourced contracts that use local assets should be made an allowable cost in projects supported by the Broadband Fund.**

### 1.9. Oversight and Enforcement

78. The CRTC notes that it will "adopt a multipronged approach to compliance and enforcement, which includes the imposition of obligations, reporting requirements, the distribution or withholding of funding, and the imposition of conditions on the offering and provision of broadband services" for its Broadband Fund (CRTC 2018-377, para 303). However, no details of these requirements are provided.

79. We believe that oversight is critical to ensure that projects are completed and meet the specified connectivity and reliability requirements. Historically, some publicly funded transport initiatives have failed in this respect. For example, problems with Alberta's SuperNet have been well documented by the Auditor General of Alberta in November 2018.[30] A *CBC News* story about this audit notes that Service Alberta, the department

[30] The Auditor General of Alberta's report is available here: https://www.oag.ab.ca/reports/service-alberta-pa-nov-2018

responsible for managing the SuperNet contract, "lacked the systems to properly measure performance and enforce compliance of the contracts to build and run the system."[31]

80. The FCC provides a template that may be helpful for developing monitoring and compliance requirements for recipients of the Commission's Broadband Fund. In the U.S., recipients of subsidies to support service provision through the High Cost and/or Lifeline programs must file annual reports with data on financial and operations metrics, which are used to validate their eligibility for ongoing support. Operations information includes Quality of Service reports on outages, complaints, and service functionality in emergencies. [32] (see pp.2-5)

81. To qualify for funding, carriers providing services on Tribal land must also show that they have fulfilled a Tribal Government Engagement Obligation. They must demonstrate that they have coordinated with the Tribal government and provide a report documenting the following:

    - Needs assessment and deployment planning with a focus on Tribal community anchor institutions;
    - Feasibility and sustainability planning;
    - Marketing services in a culturally sensitive manner;
    - Compliance with Rights of way processes;
    - Compliance with Land Use permitting requirements;
    - Compliance with Facilities Siting rules;
    - Compliance with Environmental Review processes;
    - Compliance with Cultural Preservation review processes; and
    - Compliance with Tribal Business and Licensing requirements. (p. 7)

**82. RECOMMENDATION: The Commission should publish details concerning how oversight of funded transport projects will be carried out, and how compliance will be enforced. These details should include specific annual reporting requirements for Indigenous contexts (as is required by the FCC).**

## Part 2: Comments on Access to Support Structures

### 2.1. **Jurisdiction**

83. Support structures such as towers, poles, shelters and enclosures are required to deploy local access infrastructure. FMCC member organizations face significant barriers when attempting to access local support structures owned and/or managed by incumbent telecommunications companies that issue access permits for joint usage of these resources.

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[31] See: https://www.cbc.ca/news/canada/edmonton/alberta-auditor-general-supernet-1.4896294

[32] Form available at: https://www.usac.org/wp-content/uploads/high-cost/documents/Forms/FCC-Form-481-Template.pdf.

84. The Commission stated in this proceeding's Notice of Consultation (CRTC 2019-406):

> "Under the *Telecommunications Act*, the Commission has the authority to regulate access to support structures (such as poles and conduits) owned by a Canadian carrier. In Telecom Decision 2008-62, the Commission determined that such authority extends to support structures not owned by the carrier but to which the carrier has the right to grant access. The Commission's authority does not include regulating access to support structures owned by third parties that are not also Canadian carriers, such as provincially regulated utilities, nor does it extend to transmission lines situated on private land" (para 7).

85. However, we note that this issue is currently being considered by the Broadcasting and Telecommunications Legislative Review (BTLR) Panel. In its January 2020 report, the BTLR Panel stated:

> "34. We recommend that to promote efficient network deployment, the *Telecommunications Act 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*.[33] (p.25, emphasis added).

86. We also point to the recommendation from the BTLR panel that the *Telecommunications Act* be amended to "prohibit any exclusive arrangement for the use of passive infrastructure" (p.25).

87. The Panel also recommended an amendment to the *Act* to: "[E]mpower the CRTC to review and vary the terms and conditions of access to the support structures of provincially regulated utilities, to ensure non-discriminatory arrangements" (p.26).

88. In the past, FMCC member organizations have not been not aware of any standard rules or regulations that govern access to support structures. Instead, FMCC organizations have been forced to negotiate these issues on a project-by-project basis. This variability exists even within a service region; for example, we know of cases where rules applied to certain organizations are not applied to others.

**89. RECOMMENDATION: We agree with the BTLR Panel's proposed changes to the Telecommunications Act concerning support structures. Meanwhile, we also urge the Commission to explore waivers or other means to extend its jurisdiction over support structures owned by third parties including provincial governments.**

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[33] 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

### 2.2. Databases

**90.** Information about the ownership of support structures should be made publicly available in order to support the planning phase of projects, including for applications to the Broadband Fund. This information should be provided in a database developed by the Commission. We note that the BTLR committee recommended that "the CRTC have explicit responsibility for the administration of databases related to the functioning and location of telecommunications networks." (p.23).

91. **RECOMMENDATION: Given their essential role as a component of these networks, information regarding the support structures owned by entities other than telecommunications carriers should be included in a publicly available database provided by the CRTC.**

### 2.3. Cost of Accessing Support Structures

92. The high costs to access support structures in First Nations communities must be addressed. FMCC recognizes that charges for the joint usage of support structures help pay for necessary upgrades or modifications, and also compensate an owner for any eligible additional costs. However, FMCC opposes actions (or inactions) by incumbents and other owners of support structures that may block or delay projects, or may indirectly finance incumbents for the general maintenance of their network and/or support structures.

93. Support structures may be located within the boundaries of First Nations and other Indigenous communities. Incumbent providers have typically received free access to install these structures in these communities. However, other organizations, including First Nations providers, must subsequently pay unreasonably high charges to access them. At the construction phase of a project, these charges may consist of authorization fees, engineering charges, payment for repair, and maintenance. They may also include the cost to make any modifications to support structures so that they comply with regulations that the incumbent owner often may have either neglected or ignored. These costs often exceed what would normally be expected for similar work. Furthermore, once the new user has paid for these support structures, additional monthly fees are charged for usage and maintenance.

94. As a result of these costs, FMCC members typically budget between $300 and $1,000 per utility pole, if not more, for the support structures joint usage authorization process. A small community with 500 poles that wishes to deploy FTTH would therefore have to plan to spend up to $500,000 just for authorization to access these poles.

95. Once authorization is granted, users of support structures must pay additional construction, repair and upgrading fees. For example, we know of organizations paying over $25,000 to an incumbent provider to upgrade and repair aerial support structures.

96. Third-party users of support structures must pay additional (and ongoing) monthly usage and maintenance charges including exceedingly high ancillary costs for basic activities such as snow clearance.

97. Also, the cost of access to utility poles typically increases over time, sometimes on an annual basis. For example, this year the WJBTN's access to poles owned by the local distribution corporations is increasing from $22 to $48 per pole. This cost increase by the Ontario Energy Board is impacting WJBTN's efforts to deploy FTTH projects in its member communities, which are remote First Nations located in the James Bay region. Hydro One is helping by phasing in price increases over time, but WJBTN must still come up with additional funds to cover those increases.

**98. RECOMMENDATION: The Commission should make available adequate funding through the Broadband Fund to cover the total costs of access to all support structures, including the elements listed above.**

**2.4. Timeliness of Information and Access Approvals**

99. At present, costs to lease assets and additional charges are frequently not provided until after infrastructure construction is completed, and are often very high (or require years of remediation work which significantly delays project completion). This lack of information can result in project delays and budget overruns.

**100.** Organizations have also faced significant delays before they are granted access permits for support structures. Impacts on projects due to such delays can be enormous. In several cases organizations have been forced to wait between 12 to 24 months to get a permit before construction work could begin – a problem compounded in regions with short construction seasons.

**101.** The explanations given for such delays are sometimes unreasonable. For example, in one case a permit was not granted sooner by the support structure owner because it was the only authorized entity to conduct repairs. Despite repeated requests, the owner took a year to complete the work, and the leasing organization paid for it to be done.

**102. RECOMMENDATION: Where the CRTC has jurisdiction, it should specify deadlines for owners of support structures to provide information on costs of access to assets and other related costs. It should also urge other third-party owners to abide by these deadlines.**

**103. RECOMMENDATION: Where the Commission has jurisdiction, it should enforce timely issuance of access permits by support structure owners. It should also urge other third-party owners to abide by these deadlines.**

104. **RECOMMENDATION: The Broadband Fund should allow supplemental funding in cases where funded projects must absorb additional costs, such as access to support structures, due to circumstances beyond their control.**

2.5. **Enforcement and Complaint Process**

105. Lack of certainty with respect to regulations governing access to support structures that fall under the jurisdiction of the Commission should be addressed. This uncertainty is a

significant barrier for small organizations that lack legal and technical resources to continually monitor facilities and negotiate with their owners.

106. For example, we know of a case where a non-profit service provider was required to move a cable belonging to an incumbent because the cable was installed incorrectly. As a result, the organization not only suffered a delay in the project, but also had to pay to fix the cable installation.

107. In another case, a support structure owner built a new utility pole line that blocked third-party access. Despite the fact that this problem was created by the owner and failed to meet existing regulations, an organization that wanted access had to pay for the necessary modifications.

108. Support structures in some rural, remote, Northern and Indigenous communities are not adequately maintained by their owners. This impacts the ability of organizations to utilize these structures to deploy broadband projects. In some cases, owners of support structures will only conduct repairs when a joint usage request has been made by a new user to repair every pole in an entire network.

109. At present we know of no formal complaint mechanism that organizations could use to report the issues related to support structures that we noted above. It is unclear how support structures are regulated and what remedies may be available such as, such as rule modifications and/or rate changes.

**110. RECOMMENDATION: The Commission should put in place a clear process that third-party organizations can use to report problems and request remedies concerning access to support structures.**

### 2.7. Trenching; "Dig Once"

111. In remote communities, support structures for fibre should be added to all infrastructure projects, such as in road construction. Support structures might for example include installing conduit and access ducts every few kilometres. These support structures should be made open access, to allow multiple providers to access them and to support network redundancy and path diversity.

112. This approach will result in overall cost-savings of public funds. For example, installing conduit costs approximately $2 per metre when installed at the same time as road construction, versus a cost of approximately $25-$50 per metre when existing roads have to be dug up to lay conduit.

113. 'Dig Once' policies have been adopted by several states and municipalities in the U.S.[34] For example, as noted by the North Carolina Department of Information Technology:

[34] See http://www.csg.org/pubs/capitolideas/enews/cs41_1.aspx

> " 'Dig once' policies provide ready-made buried conduit, enabling future providers to more easily and cheaply install fiber by threading it through existing conduit.
>
> Installing empty conduit which is relatively inexpensive during construction projects supports future expansion by substantially lowering the expense of digging for providers."[35]

114. We also endorse the efforts of Indigenous nations and communities to implement their own "dig once" policies if they so wish, and encourage the Commission to support these endeavours.

115. **RECOMMENDATION: The CRTC should consider instating a 'dig once' policy in collaboration with other infrastructure developers, such as governments, utility companies, and road builders.**

## Part 3: Comments on Other Related Issues within the Scope of the Proceeding

### 3.1. Indigenous Issues

#### Jurisdiction

116. Jurisdictional issues regarding support structures and corresponding rights-of-way should be addressed with reference to Indigenous Lands and Jurisdiction, and Treaty and Aboriginal Rights. In general, principles of meaningful consultation and informed consent of Indigenous communities must guide regulatory changes related to support structures and rights-of-way.

117. Section 43/(3) of the *Telecommunications Act* states: "No Canadian carrier or distribution undertaking shall construct a transmission line on, over, under or along a highway or other public *place without the consent of the municipality or other public authority* having jurisdiction over the highway or other public place." (emphasis added)

118. The *Act* further states in Section 43(4) that: "Where a Canadian carrier or distribution undertaking cannot, on terms acceptable to it, obtain the consent of the municipality or other public authority to construct a transmission line, the carrier or distribution undertaking may apply to the Commission for permission to construct it and the *Commission may… grant the permission subject to any conditions that the Commission determines*." (emphasis added)

119. Further, the BTRL Panel noted that:

[35] See: https://www.ncbroadband.gov/playbook/policy-and-broadband/dig-once-policies/

"Consistent with Canada's federal structure, *governance for passive infrastructure is therefore shared across multiple bodies and levels of government.* (p.89, emphasis added).

Further, "*Municipalities and other public authorities pursue legitimate and important public interests in managing land use and physical assets.* The CRTC's ability to modify their decisions is conditioned explicitly on having due regard to others' use and enjoyment of the highway or other public place." (p.93, *emphasis added*).

120. We note that "bodies and levels of government" and public authorities include Tribal and other Indigenous governments. Therefore, specific language referring to such Indigenous governments must be included in policy, plans and regulations concerning support structures and rights-of-way. This includes access agreements negotiated between carriers and Indigenous governments.

121. Our position is that such land planning processes must recognize Indigenous governments and include Indigenous land and treaty rights. First Nations hold jurisdiction over rights-of-way in their territories; they are not municipal governments. These assets are owned and governed by the Nation and therefore must be recognized as such.

122. We also draw attention to the Tribal Government Engagement Obligation that the FCC requires from carriers receiving subsidies to provide services on Tribal lands, and propose that similar requirements should be imposed by the CRTC. (See above, paras 80 and 81).

**123. RECOMMENDATION: Specific language concerning Indigenous land and treaty rights and procedures required to access land, "passive infrastructure" such as rights of way, poles, and ducts, as well as other telecommunications equipment, should be included in any updated regulations concerning support structures.**

**124. RECOMMENDATION: CRTC regulations should state that the Commission does not have the right to approve construction of transmission lines on Tribal or other Indigenous lands without the consent of the relevant Indigenous government.**

125. We note the CRTC's statements in 2018-377 that it "expects applicants to identify any established or asserted Aboriginal or treaty rights that might be affected by the proposed project and to commit to undertaking any further consultations that may be necessary" (paras 219-224). We also note the CRTC's statements in 2018-377 that: "The Commission may give special consideration to proposed projects that would serve Indigenous communities".

126. Existing rights-of-way agreements involving Indigenous lands and communities are outdated and should be updated. Many of these rights-of-way agreements were written in the 1960s/70s, before the formal recognition of Indigenous lands and jurisdiction, and Aboriginal and Treaty Rights. For example, in many cases, telecommunications networks cross Indigenous lands, but the peoples living on those lands cannot access them. Furthermore, members of these Indigenous communities do not receive any compensation from

telecommunications service providers for traversing their territories. This situation needs to be addressed.

**127. RECOMMENDATION: In the spirit of reconciliation, meaningful consultation and informed consent, agreements must be reviewed and modernized with respect to access to support structures and rights-of-way.**

**Financing Requirements**

**128.** Indigenous providers face ongoing challenges to securing financing for projects supported by the Broadband Fund. In terms of financial requirements, we note the *Guide*'s requirement that applicants must provide "an irrevocable letter of credit from the lending institution, if relying on credit." An irrevocable letter of credit is an appropriate requirement for private sector enterprises with access to capital. However, this requirement raises a barrier for Indigenous and non-profit organizations that face challenges in securing credit for multi-million dollar projects.

129. Many Indigenous communities are limited in their ability to apply for credit because of existing but outdated *Indian Act* regulations governing the operations of Indigenous communities. Normal funding mechanisms have traditionally not been viable for First Nations organizations because banks and other lenders will not accept on-Reserve assets as collateral as it is impossible for them to put a lien on on-Reserve assets.

130. Also, non-profit Indigenous providers often find it difficult to qualify for credit or loans from other sources. For example, non-profit organizations are not eligible to access Business Development Bank of Canada financing. While the Infrastructure Bank of Canada is open to alternative financing for First Nations projects and can provide expertise to help access other sources of financing and/or act as a co-signer, its support is currently restricted to First Nations local leadership (e.g. Bands).

**131. RECOMMENDATION: Given these challenges, we recommend that in lieu of letters of credit, Indigenous non-profit organizations be allowed to provide examples of their successful development and operation of similar infrastructure projects. Examples could include projects such as electrification, water and waste-water, roads, airports, and so on.**

**132. RECOMMENDATION: We also recommend that the CRTC brief third parties such as ISED, INAC, the Business Development Bank of Canada, and the Infrastructure Bank of Canada on the Broadband Fund, and explore with them how Indigenous communications providers could qualify for their support.**

### 3.2. Operating Costs in High-Cost Serving Areas (HCSAs)

133. While the Broadband Fund provides funding for capital costs to install or upgrade facilities in rural and remote underserved regions, it does not provide any ongoing support

for operating costs. Providers in these regions face challenges because their operating costs are high, there are few subscribers to share the costs, and rates must be affordable for users.

134. For example, the CRTC has set retail internet rates in an effort to make Internet access affordable for consumers located in High-Cost Serving Areas (HCSAs). This is an admirable policy intended to benefit end users in these regions, but has consequences for small providers.

135. The Commission should ensure that this policy does not inadvertently make it difficult for non-profit and Indigenous operators to operate networks on a sustainable basis in HCSAs where operating costs (for example purchasing backhaul capacity, leasing hydro poles and conducting maintenance) are much higher than in urban, southern areas.

136. Consider the costs to serve a small community with $48 lease cost per pole and 100 poles = $4,800 plus $6,000 in transport costs for a total of $10,800. If there are 100 subscribers in the community and the CRTC limits retail prices to $50 per person, the total revenue would be $5,000. The result is a shortfall of $5,800, which is impossible for a non-profit or Indigenous provider to sustain over time.[36]

137. We therefore believe that there should be a subsidy to cover the gap between high operating costs and subscriber revenue in HCSAs. We note that commercial service providers have made similar requests for government support for operational costs in HCSAs. For example, Northwestel has requested subsidies for operational costs including transportation to/from remote communities and electricity. As the company noted in its 2018 submission to the *Standing Committee on Northern and Indigenous Affairs: Northern Infrastructure Projects and Strategies* report:

> "Dedicated funds for the North that recognize the unique characteristics and high costs of operating here and avoid undercutting existing private sector investments are the only way we will close the infrastructure gap that currently exists." [37] (p.4)

138. We also point out that Universal Service Funds in the US provide subsidies for operating costs for providers serving rural and remote regions. The FCC's High Cost/Connect America Program consists of multiple funds that subsidize the delivery of voice and broadband service across rural America.[38] Rural providers may also apply for subsidies to serve schools and libraries through the E-Rate Program, and rural health facilities through the Rural Health Care Program.[39] These subsidies in remote regions such as Alaska help to provide revenue to cover costs of serving isolated villages.

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[36] Penny Carpenter, Executive Director of K-Net, provided examples of the gap between K-Net's costs and the prices Indigenous residents could afford in remote communities in the in-person proceeding for CRTC 2015-135 (Review of Basic Telecommunications Services).

[37] Northwestel (2018). Presentation to Standing Committee on Indigenous and Northern Affairs: Northern Infrastructure Projects and Strategies. Available at: https://www.ourcommons.ca/Content/Committee/421/INAN/Brief/BR10235746/br-external/NorthwesTel-e.pdf

[38] See https://www.usac.org/high-cost/funds/

[39] See https://www.usac.org/e-rate/ and https://www.usac.org/rural-health-care/

**139. RECOMMENDATION: In High-Cost Serving Areas (HCSAs), for non-profit and Indigenous service providers, operating costs that exceed projected revenues for broadband services should be considered eligible expenses for applications to the Broadband Fund.**

## Part 4: Comments on Other Related Issues that involve Jurisdiction by ISED: Issues related to Spectrum and Satellites

140. We recognize the limits of the scope of this proceeding and more broadly, of the Commission's jurisdictional limits. However, we point out that there are many issues relevant to this proceeding which are potential barriers, or potential solutions, to extending broadband-capable networks into underserved regions that do not align with the Commission's current scope and jurisdiction.

141. The Broadband Fund includes support for upgrading satellite facilities and for mobile wireless infrastructure. While we recognize that issues regarding spectrum and satellite access are administered by ISED, we include them here as important factors to consider in this proceeding, given their importance in ensuring adequate, affordable access to rural, remote, Northern and Indigenous communities and regions.

142. Ongoing debates regarding the division of responsibilities regarding policy and regulation of Canada's telecommunications system involve both the CRTC and ISED. For example, consider the BTLR Panel's extensive comments on this issue, and its statement that:

> "Wireless technologies play a key role in achieving Canada's telecommunications policy objectives. For example, advancements in wireless technologies, including satellite technologies, hold the promise of providing access to advance communications in even the most remote parts of Canada. Further, in competitive environments, spectrum management practices can support efforts to promote affordability and choice, through measures such as spectrum set-asides….
>
> Our recommendations with respect to spectrum management aim to clarify roles and responsibilities between the Minister of Industry as the wireless communications regulator and the CRTC as the regulator of the larger telecommunications sector. *The separate mandates of the regulators open the possibility for confusion among regulated parties as to their various obligations and responsibilities*"[40] (p.95, emphasis added).

143. Although the BTLR Panel did not specifically address the licensing and regulation of satellites, we note that satellite issues also present barriers to the deployment of broadband-

[40] 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

capable networks in underserved areas in Canada, and specifically, access to transport services.

### 4.1. Wireless Issues

144. With respect to fixed and mobile wireless projects, spectrum access and licensing rules must provide more opportunities for small and non-profit community and Indigenous providers and the communities they serve. We provide two examples below.

**Mobile Spectrum Allocations:**

145. Effective spectrum management and regulation should support small and non-profit community operators and not only incumbents and other large providers.[41] We recognize that spectrum management and allocations are the responsibility of ISED, but note the constraints faced by small and Indigenous providers who want to access spectrum.

146. Some Indigenous organizations such as K-Net Mobile in Northwestern Ontario have utilized spectrum through subordinate licenses, where available, to provide mobile services to their populations. [42] However, existing spectrum licensing policies limit Indigenous organizations in providing wireless services.

147. The Fall 2018 report of the Auditor General of Canada highlighted significant shortcomings in Canada's existing spectrum management regime. As noted in that report:

> "[S]mall Internet providers did not have sufficient access to high-quality spectrum to support broadband deployment in rural and remote areas. The Department [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" (p.4).[43]

148. One solution would be a re-examination of mobile service tiers. In a previous response to Industry Canada spectrum consultation (SLPB-004-14), the FMCC commented on service tiers and minimum bids. We expressed our concerns with the geographic and population metrics used to determine existing tiers and corresponding licenses, and also noted that the expense of some proposed minimum bids is a challenge for independent, non-profit cellular providers serving rural, remote and Northern communities. We raised concerns that these high costs restrict the ability of these organizations to expand or establish their operations.

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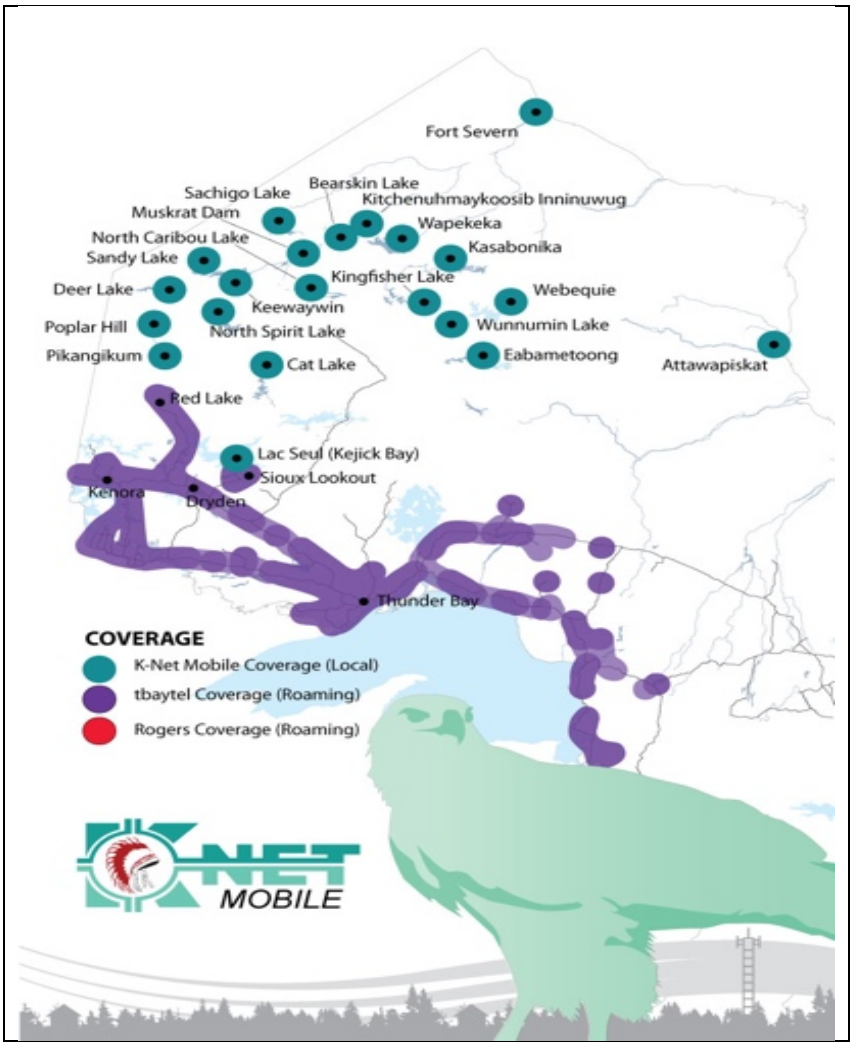
[41] Organizations including the International Telecommunication Union (ITU) Development Bureau have recommended that administrations consider mechanisms to facilitate the development of broadband services in rural and remote areas by small and non-profit community operations. Recommendation ITU-D 19. WTDC 2017 report. https://www.itu.int/en/ITUD/Conferences/WTDC/WTDC17/Documents/WTDC17_final_report_en.pdf

[42] See: http://mobile.knet.ca/

[43] See: http://www.oag-bvg.gc.ca/internet/English/parl_oag_201811_01_e_43199.html

149. Specifically, we provided an example from the areas covered in Tier 2-09. In its sparsely-populated northern section, most communities are fly-in First Nations that are serviced by one of our members, an Indigenous provider called K-Mobile. As is clear from Map 1, KMobile's service area focuses only on the northern regions of Tier 2-09. It does not include the more densely-populated and accessible southern regions of the Tier.

**Map 1: K-Mobile Service Area: Remote Northern Ontario**




Source: http://mobile.knet.ca/coveragearea

150. We present this example to highlight how the existing composition of service tiers and corresponding spectrum licenses can restrict the ongoing development of infrastructure and services in expensive-to-service regions. Alternatively constructed service tiers might reflect different regional characteristics/population sizes/opening bids in ways that can support community-based service providers like K-Mobile as "operating new entrants" serving very remote communities.

**151. RECOMMENDATION: The Broadband Fund and ISED should recognize the need to ensure a more inclusive approach to the distribution of spectrum licenses that reflects the diversity of providers.**

**Spectrum Set-Asides for Indigenous Territories**

152. The Commission and ISED should consider the establishing spectrum set-asides or license transfer for Indigenous territories. This approach is being adopted by the FCC in the U.S. for 2.5 GHz for fixed wireless. The FCC is providing Native Tribes with an opportunity to secure 2.5 GHz spectrum covering their Tribal lands as a low-cost means to support broadband deployment in these communities. From the FCC's website:

> **"2.5 GHz Rural Tribal Window**
> This window is a unique opportunity for Tribes in rural areas to directly access unassigned spectrum over their Tribal lands, subject to buildout requirements. The 2.5 GHz band is suitable for both mobile coverage and fixed point-to-point uses, and is currently used to provide broadband service by legacy educational licensees and commercial providers that lease the spectrum…."[44]

153. With respect to eligibility of applicants, the FCC notes that:

> "Any federally recognized Tribe or Alaska Native Village may apply for spectrum in the Rural Tribal Window. Consortia of federally recognized Tribes and/or Native Villages, or other entities controlled and majority owned by such Tribes or consortiums, are also eligible to apply.
>
> Applicants in the Rural Tribal Window may designate their own desired license areas, so long as the entire area is rural Tribal land, and the applicant has a local presence in the area. "Rural" means an area that does not include an urbanized area with a population of > 50,000 people, according to Census Bureau data. 'Tribal land,' for this purpose, means any federally recognized Tribes' reservation, including former reservations in Oklahoma and Alaska Native regions established pursuant to the Alaska Native Claims Settlement Act or Indian Allotments."[45]

154. The Rural Tribal Priority Window opened on Monday, February 3, 2020, and currently is planned to close on August 3, 2020. As of April 21, 2020, 23 Tribal Nations had already filed applications demonstrating strong interest in this program.[46]

155. At present, there is no comparable program in Canada. ISED has already auctioned much of this spectrum. Most of the winners were large incumbents that will use it for 5G services.

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[44] Source: https://www.fcc.gov/25-ghz-rural-tribal-window

[45] See: https://www.fcc.gov/25-ghz-rural-tribal-window

[46] See: https://www.fcc.gov/25-ghz-rural-tribal-window-submitted-applications

**156. RECOMMENDATION: ISED should set aside portions of appropriate spectrum for fixed wireless for use by Indigenous communities through a program similar to that employed by the FCC.**

### 4.2. Satellite Licensing Conditions

157. Since satellites utilize a public resource (electromagnetic spectrum) and access a limited number of delegated orbital slots, they are regulated by national governments. While many of these regulations are technical in nature (requiring the use of standardized protocols and so on) national governments also use them to meet defined policy objectives. In Canada, these have included a 2 percent public benefit 'tax' on satellite revenues, and the provision of satellite services to underserved regions.

158. In the past, Indigenous non-profit telecommunications providers serving rural and remote communities have been able to access 'Public Benefit' satellite capacity as a condition of the orbital licenses required to launch satellites.

159. For example, Telesat's two Anik F-series satellites occupied two of Canada's four orbital positions, and a group of Indigenous organizations (K-Net in Ontario, Broadband Communications North in Manitoba, and the Kativik Regional Government in Quebec) formed the Northern Indigenous Community Satellite Network (NICSN) to leverage the public benefit obligations associated with their licenses to support their cooperative satellite network. In 1999, K-Net worked with Industry Canada to utilize an available block of Public Benefit space segment that Telesat Canada had made available as a condition of one of its orbital licenses to network three remote First Nations (Fort Severn and Slate Falls in Ontario, and Anaheim Lake in B.C.).

160. In 2000, Industry Canada announced a competition for a new orbital position license (118.7 degrees West). As a condition of securing this license, Telesat agreed to contribute one full Public Benefit transponder (36MHz) on its Anik F2 satellite – a value of approximately $20M over the satellite's 15-year life.[47] A year later, K-Net used a portion of that transponder to connect 11 satellite-served First Nations in northern Ontario (with portions of the space segment also shared with the territorial governments of NWT and Nunavut).[48] Setting up a non-profit cooperative to manage this network, K-Net internally cross-subsidized revenues and bandwidth capacity to ensure its member communities gained

[47] To ensure this Public Benefit space segment would not be used to compete with private sector carriers, recipient organizations could not use it to provide residential or commercial Internet services (though the onus was on carriers to raise concerns). Telesat Canada was firm that the Public Benefit be used to provide public services, but remained flexible in the context of rural and remote communities, given the lack of a business case for commercial ISPs to lease space segment to sell in those areas. The company also saw the potential for long-term business development; over time a satellite network serving remote and rural communities might attract paying customers. This prediction proved well-founded, since the government of Canada subsequently purchased several transponders from Telesat through the Broadband Canada program.

[48] During this process, the governments of Nunavut and the NWT requested access to the Public Benefit space segment. As a result of their interventions, Industry Canada divided the transponder between K-Net, the Government of Nunavut, and the Government of NWT. The two territorial governments worked with SSI Micro to set up Qiniq in Nunavut and AirWare in the NWT.

equitable access to the satellite resource, and could sustain operations and maintenance costs. Member communities also received economic development and capacity-building opportunities associated with local ISPs.

161. In 2002, Keewatin Tribal Council (KTC) from Manitoba and the Kativik Regional Government (KRG) from Nunavik expressed interest in joining K-Net's satellite cooperative. They prepared a joint application for the two rounds of the federal government's National Satellite Initiative (NSI). Administered by Infrastructure Canada and the Canadian Space Agency, NSI was "created to specifically address the high cost of broadband access for communities in the mid to far North and in isolated and remote areas of Canada where satellite technology is the only reasonable means of providing broadband access" (CRTC, 2005, p.96).[49] It provided support for not-for-profit organizations to access Public Benefit space segment on Anik F2 made available as a condition of the Anik F3 orbital position license. This provided two rounds of capital and operational funding to bridge access divides in Canada's remote northern communities.

162. Round 1 of the National Satellite Initiative (2003– 2005) consisted of Public Benefit space segment (planned for release by Telesat as a condition of the orbital position license associated with satellite Anik F3). K-Net, KTC and KRG requested funding for space segment and ground infrastructure through an initiative launched in early 2004. Framing access to space segment as a capital cost, the partners argued that 15 years of pre-paid Public Benefit access (2004-2019) was necessary to meet their strategic development needs. In 2004, Industry Canada approved the application, and the three partners became not-for-profit stewards of Public Benefit space segment on Anik F2. Contributions and matching funds from government agencies and private sector organizations supported the construction of ground infrastructure. Telesat's contributions covered 100 percent of the space segment: the equivalent of one full transponder for 15 years (ending in 2019). Additional funding extended ground infrastructure to 35 communities: 14 in Quebec, 11 in Ontario, and 10 in Manitoba. In 2005, the partners publicly announced "the first inter-provincial community-owned and operated broadband satellite network in Canada" (National C-Band Benefit User Group, 2005). [50]

163. Round 2 of the National Satellite and the NICSN Joint Venture Agreement (2006 – 2008) involved 10 years of funding from Industry, FedNor and Telesat. Telesat agreed to contribute an additional year of space segment, for a total of 11 years of fully-subsidized space segment. At the conclusion of NSI Round 2, the NICSN partners could access enough bandwidth to deliver residential and commercial Internet and a full suite of broadband-enabled public services to their member communities. Their network supported applications like telehealth, e-learning, e-justice, video conferencing, VoIP telephony and more. Between 2009 and 2011 all three partners secured additional funding through Industry Canada's Broadband Canada initiative. At present, all three organizations continue to operate large-scale, sustainable networks providing services across the northern regions of the provinces of Manitoba, Ontario and Quebec.

[49] See: http://publications.gc.ca/collections/Collection/BC92-57-2005E.pdf

[50] Archived information about this event is available at: http://smart.knet.ca/satellite.

164. A similar Public Benefit requirement could also be made a condition of the licensing of Low Earth Orbiting (LEO) satellite systems. We note that as of late 2018, it was reported that there were 13 Canadian commercial satellite constellations in development with 384 planned satellites and five satellites already on-orbit.[51] Some of these planned constellations have been supported through several hundred million dollars in public funding.[52]

165. In cases where terrestrial facilities are not a near-term solution, these new networks could contribute to the goal of providing broadband access for remote and Indigenous communities. While jurisdiction over satellite licenses falls under ISED, the Commission should work together with ISED to secure similar 'Public Benefit' as a condition of licenses for LEO satellites.

166. In March 2017, ISED held a Consultation on the Licensing Framework for Non-Geostationary Satellite Orbit (NGSO) Systems and Clarification of Application Procedures for All Satellite Licence Applications.[53] ISED's Consultation document outlined its policy objectives:

> "In fulfilling its spectrum management mandate, ISED's policy objective is *to maximize the economic and social benefits* that Canadians derive from the use of the radio frequency spectrum resource. In licensing satellites, ISED is also guided by the objective of ensuring that Canadian satellite users (e.g. broadcasters, government institutions and telecommunications firms) have access to the satellite capacity that they need to carry out their respective functions, and to *ensure that services are available throughout Canada, including the North. These objectives are furthered through the imposition of licensing rules and conditions*, including those related to national coverage and the availability of sufficient capacity for Canadian use." (para 7) (emphasis added).

167. The Decision related to these consultations was released in June 2017.[54] The record of this Decision indicates that all 13 parties that participated in the consultation were commercial satellite companies. No public interest interveners are represented in the record of this Decision, which "examined whether the Department's licensing rules and obligations, as applied to NGSO systems, are appropriate and whether Canadian coverage and capacity needs will be met by Canadian-licensed systems." (para 6)

168. Given the potentially significant impact that the introduction of LEO satellites will have on the residents and communities of Canada's rural, remote, Northern and Indigenous regions, we are concerned with the lack of consultation with these groups in the establishment of the licensing conditions for such projects.

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[51] See: https://spaceq.ca/13-canadian-commercial-satellite-constellations-in-development/

[52] See: https://spacenews.com/canada-budgets-a-boost-for-leo-broadband-constellations/ and https://www.canada.ca/en/innovation-science-economic-development/news/2019/07/minister-bains-announces-major-investment-in-the-future-of-connectivity-for-canadians-living-in-rural-and-remote-communities.html

[53] See: https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11263.html

[54] See: https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11302.html

169. ISED has indicated that the regulatory framework established in 2017 is open to additional refinement. The agency stated that:

> "ISED will also be actively engaged, through the ITU, to refine the international regulatory framework as it applies to non-geostationary systems. The Department will review its domestic framework when new rules or recommendations are adopted. In the interim, ISED is considering the measures outlined above to provide greater clarity for potential applicants and existing licensees." (para 48)

170. **RECOMMENDATION: Following past practice, an amount of reserve capacity on these satellite systems could be provided for Public Benefit, as a means for cooperative and non-profit broadband service providers to provide connectivity services to their communities.**

171. This Public Benefit might be achieved with reference to the following licensing condition included in the ISED Consultation document: "For each [LEO] satellite, licensees must reserve capacity for use by Canadians that is equal to the proportion of the Canadian territory covered vis-à-vis the total territory covered by that individual satellite" (para 27). This reserve capacity might also include a Public Benefit agreement to be negotiated between ISED and commercial satellite service providers.

172. Another mechanism for obtaining a Public Benefit could be inclusion of a clause in Memorandum of Understanding (MOU) agreements between ISED and satellite companies. For example, an amendment might be included in the 2019 MOU between Industry Canada and Telesat Canada to include such Public Benefit requirements in the Telesat LEO project.[55]

173. **RECOMMENDATION: We therefore recommend that ISED and the CRTC hold additional consultations with respect to licensing conditions for LEO satellite systems, with a specific focus on Public Benefit requirements that could be included as terms of these licenses.**

## 5. Conclusion: Request to Participate in Follow-on Proceedings

*174.* We thank the Commission for the opportunity to contribute to this consultation and request the opportunity to participate in any associated follow-on proceedings. Our members have firsthand knowledge of the unique contexts where Indigenous and nonprofit service providers operate, including the regions that are the focus of the Broadband Fund. Their perspectives and experience are reflected in the comments and recommendations in this submission..

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[55] See: http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11543.html#_blank