BEFORE INNOVATION, SCIENCE, AND ECONOMIC DEVELOPMENT CANADA

IN THE MATTER OF

CONSULTATION ON THE SPECTRUM OUTLOOK 2022 TO 2026

COMMENTS OF

CANADIAN ASSOCIATION OF WIRELESS INTERNET SERVICE PROVIDERS

21 NOVEMBER 2022

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1. INTRODUCTION

1. Canadian Association of Wireless Internet Service Providers ("CanWISP") is pleased to provide the following comments in the Consultation on the Spectrum Outlook 2022 to 2026[1] ("the Consultation").

2. CanWISP represents Wireless Internet Service Providers ("WISPs") across Canada. These operators build, operate, and maintain fixed-wireless broadband networks that provide Internet access to households and business across Canada, primarily in rural communities. These facilities-based operators innovate, invest, and employ Canadians in the communities they serve. CanWISP members have been the leading investors in broadband networks in these communities for decades, and are the sole source of broadband internet for many Canadian homes and businesses.

3. A chronic lack of access to spectrum is a significant barrier faced by these operators that bring broadband connectivity to underserved rural areas.

4. In these comments, CanWISP proposes a number of measures related the allocation of spectrum designed to reduce these barriers. The specific measures proposed relate to:

a. Improving small rural carriers' access to spectrum auctions using spectrum caps and set-asides specific to small carriers and rural service areas;
b. Improving small rural carriers' access to non-auctioned spectrum using non-competitive licensing and access licensing mechanisms; and
c. Targeting rural connectivity improvements better through more granular spectrum deployment requirements, defining smaller service areas for spectrum allocations, and expanding the broadband mapping program.

5. A spectrum policy that enables rural operators to access licenced spectrum would serve rural Canadians and support Canada's Connectivity Strategy to deliver 50/10 Mbps to all Canadians by 2030.

6. In recent decades, spectrum policy has successfully pursued the fostering of more competition and lower prices in the Canadian mobile services market. This has been a significant challenge.

[1] SPB-005-22, *Consultation on the Spectrum Outlook 2022 to 2026*, September 2022 ("Spectrum Outlook Consultation")

7. As noted by the Commissioner of Competition,

> *Over the last two decades, there has been a history of failed entry and consolidation, frustrating regulatory efforts to stimulate competition by entry of independent players:*
>
> - *In 2007, Industry Canada announced a spectrum auction to stimulate greater competition in the wireless industry. Spectrum auctions allow organizations to bid on the rights to use certain bands of frequency*
> - *In the 2008 auction, several firms purchased "set-aside" spectrum (spectrum reserved by ISED for those providers with less than 10% national wireless subscriber market share), including corporations carrying on business as Vidéotron Ltd. Inc. (now, Vidéotron Ltd., "Videotron"), WIND Mobile, Mobilicity, and Public Mobile, respectively;*
> - *In 2013, Telus acquired Public Mobile;*
> - *In 2015, Rogers acquired Mobilicity;*
> - *In 2016, Shaw acquired WIND Mobile.*[2]

8. The challenges of fostering competition and lower prices is further illustrated in the ongoing Competition Commissioner's proceeding to block the acquisition of Shaw Communications Inc. ("Shaw") by Rogers Communications Canada Inc. ("Rogers").

9. ISED is right to continue to aggressively support competition in Canada's mobile market, though competitive measures in spectrum auctions. These measures are necessary to support competitors, as they benefit Canadian consumers of mobile connectivity services.

1.1 Spectrum policy has undermined rural connectivity

10. However, in the effort to foster competition and low prices, spectrum policy has hindered Canada's progress towards bridging the urban-rural digital divide.

11. For example, in the 2021 auction of spectrum licences in the 3500 MHz band ("3500 MHz auction"), ISED made the same amount of set-aside spectrum available (50 MHz) in areas with and without large population centres – except in service areas without large population centres where there would be less than 50 MHz of spectrum available, in which case ISED made no set-

[2] Written opening statement of the Commissioner of Competition, Competition Tribunal File No. CT-2022-002, Document # 604, dated October 31, 2022, at para. 19.

aside spectrum available.[3] With a small quantity of set-aside spectrum available in rural areas, or none at all, spectrum in the 3500 MHz auction was not accessible to small and local rural service providers.

12. In the 3800 MHz auction, ISED has not introduced any pro-competitive measures that are specific to rural areas. The 100 MHz cross-band cap is the same in all service areas[4], with no measures to promote wider access to spectrum in rural service areas. Deployment requirements in the 3800 MHz band are less stringent in rural service areas than urban service areas[5], further undermining the pursuit of rural connectivity.

13. In a final example, ISED has chosen to displace WISPs from the 3650-3700 MHz WBS band[6], leaving investments stranded and businesses facing uncertainty. Rural internet service providers have invested heavily in networks using this band, bringing broadband connectivity to rural communities across Canada. The decision to displace users from the WBS band has left fixed wireless access ("FWA") network operators with no ability to invest in network improvements in the 19 months since May 2021. By halting FWA network investment, ISED has harmed consumers in the rural communities served by WISPs.

14. In this final example, ISED's decision has not only thwarted rural WISPs' abilities to invest in their core businesses of providing rural broadband connectivity. ISED has also treated these small businesses in a manner that is at odds with ISED's treatment of large spectrum-holders. In the 2019 Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Decisions on Changes to the 3800 MHz Band ("2019 Decision")[7], ISED chose to reallocate and reclaim part of the 3475-3650 MHz band. However, ISED did not displace any spectrum holders from this band; ISED permitted spectrum holders to retain 60 MHz, 50 MHz, or 20 MHz of their spectrum holdings (for companies holding > 75 MHz, 50 MHz, and < 50 MHz, respectively)[8]. While some spectrum licences were subject to changed frequency assignments

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3 SLPB-001-20, *Policy and Licensing Framework for Spectrum in the 3500 MHz Band*, March 2020, at D1.
4 SPB-002-22, *Policy and Licensing Framework for Spectrum in the 3800 MHz Band*, June 2022, at D3.
5 *Id*., at D11
6 SLPB-002-21, *Decision on the Technical and Policy Framework for the 3650-4200 MHz Band and Changes to the Frequency Allocation of the 3500-3650 MHz Band*, May 2021 ("3650-4200 MHz Decision"), at D15.
7 SLPB-001-19, *Decision on Revisions to the 3500 MHz Band to Accommodate Flexible Use and Preliminary Decisions on Changes to the 3800 MHz Band*, June 2019.
8 *Id*., at D4.

following the 3500 MHz auction, these frequency assignment changes were within the same frequency band, and generally would not require new equipment to support the new frequency assignment. From the date of the 2019 Decision, these spectrum holders were allotted between 2.5 years and 5 years to transition to their new frequency assignments (until 6 months following the 3500 MHz auction for urban licences and 3 years following the 3500 MHz auction for the most rural licences, respectively)[9].

15. By contrast, small WISPs using the WBS band today have two years and five years to transition to their new assignment (until March 2025 for urban licences and March 2027 for rural licences, respectively)[10]. This transition will require the replacement of existing radio equipment (at both the tower sites and the customer sites) with new equipment that is not available today, meaning that operators cannot yet begin their transition planning, still less the actual transition. The new frequency assignment may be as small as 20 MHz[11], which would constitute less than half of the 50 MHz available to these providers today.

16. Finally, CanWISP notes that deployments in the WBS band are extensive and provide crucial broadband connectivity services in rural communities across Canada. The transition that is imposed on WBS licence holders is significantly more onerous than the transition that was imposed on 3500 MHz licence holders. Small service providers using WBS licences have been subjected to a strikingly worse transition policy than the predominantly large holders of 3500 MHz licences. The rural communities served by small service providers will suffer the consequences of this policy decision in the form of service disruptions, degradations, and discontinuations following the WBS displacement.

17. The auction structures and non-auction spectrum policy decisions described in this section have steadily undermined the viability of small and local service providers, who are typically be the most effective providers of high-speed broadband services in rural and remote areas.

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9 *Id*., at para. 129

10 3650-4200 MHz Decision, at D17.

11 SPB-003-22, *Consultation on a Non-Competitive Local Licensing Framework, Including Spectrum in the 3900-3980 MHz Band and Portions of the 26, 28 and 38 GHz Bands*, August 2022, at Q35(b).

18. ISED has tried to counteract this damage through funding programs, further distorting the telecommunications market in rural areas. Despite numerous funding programs, a fundamental obstacle to rural connectivity remains – spectrum policy has not served rural Canadians well.

1.2 Spectrum policy must support rural broadband connectivity

19. Small and local network operators have, for decades, provided broadband connectivity to Canadians in rural and remote communities across Canada. These operators have brought higher speeds, affordable broadband prices, and consumer choice to rural homes and businesses. These dynamic companies introduce competition and innovation to markets where reliable 50/10 Mbps connectivity is not available from dominant incumbent carriers or from large regional competitors.

20. There does not need to be a trade-off between fostering mobile competition and fostering investment in rural broadband infrastructure. By treating spectrum in rural areas and urban areas differently, urban Canadians can still benefit from increased mobile competition without rural communities being left behind.

21. The balance of these comments address Policy Theme 2: Rural connectivity in the wake of COVID-19[12] and Policy Theme 5: Competition and wireless affordability[13]. From the perspective of rural Canadians, these two policy themes are deeply intertwined, since measures to foster competition and affordability in urban Canada have eroded investment and competition in rural Canada.

2. AUCTIONED AND NON-AUCTIONED SPECTRUM MUST BE ACCESSIBLE TO SMALL RURAL NETWORK OPERATORS

22. Rural connectivity is best achieved, and most quickly achieved, through a combination of fixed wireless access ("FWA") networks and fibre networks. Fibre and FWA technologies are complementary and necessary tools for building rural broadband networks.

23. FWA networks enable investment in rural fibre infrastructure. With an established fixed wireless network, operators like CanWISP members have a foundational business plan to underpin an investment in fibre last-mile networks. When considering a marginal fibre last-mile business

[12] Spectrum Outlook Consultation, at Section 7.
[13] *Id*., at Section 10.

plan, a service provider can add a fixed wireless component to expand its network footprint and support its business plan.

24. Small local and rural service providers, facing a challenging business environment in sparsely populated areas, use all means available to deliver broadband services. These nimble operators are highly motivated to connect as many homes and businesses as possible in their geographical market, and they leverage multiple technologies to meet the consumer demand for ever-faster speeds in more locations than ever before.

25. FWA networks can provide fast and reliable connectivity service if they are built using adequate spectrum. With access to high quality spectrum in sufficient quantity, small and local service providers can build networks that support robust and reliable service at speeds of 50/10 Mbps and beyond.

26. Hybrid fibre and FWA rural networks provide rural operators with the tools to bridge the digital divide. All rural network builders require access to useable spectrum if Canada's connectivity goals are to be met.

27. If rural Canadian communities are to benefit from spectrum policy, ISED must either design spectrum auctions to allow a broader variety of winners in rural areas, or aggressively pursue measures to allow non-auctioned spectrum access to companies and community organizations that will build broadband networks in Canada's hardest to serve areas, or both.

2.1 Spectrum auctions must support access by small, local service providers

28. ISED uses auctions to allocate spectrum where demand exceeds supply. By relying on market forces to allocate spectrum, ISED's objective is to use auctions to assign spectrum licences "… through a fair and transparent process, to those who value them most."[14].

29. ISED recognizes that "larger service providers likely have the means and incentive to prevent other service providers, in particular smaller ones, from acquiring spectrum licences in an open auction."[15] ISED implements pro-competitive measures, such as set-asides and spectrum

[14] *Framework for Spectrum Auctions in Canada*, March 2011, at Section 6

[15] SLPB-006-21, *Consultation on a Policy and Licensing Framework for Spectrum in the 3800 MHz Band*, December 2021, at para. 43

caps, to support the ability of regional service providers to compete with the national mobile service providers ("NMSPs")[16], which are Bell Mobility Inc. ("Bell"), Rogers, and Telus Communications Inc. ("Telus").

30. Set-asides and spectrum caps have facilitated spectrum acquisition by the regional mobile service providers ("RMSPs"), which are Bragg Communications Inc. ("Eastlink"), Québecor Média Inc. ("Vidéotron"), Xplore Inc. ("Xplore"), and Freedom Mobile Inc. ("Freedom"). These companies have amassed significant quantities of spectrum in rural communities. And while regional service providers have driven down mobile wireless prices in Canada[17], the deployments of the new competitors Freedom and Vidéotron have been heavily concentrated in urban metropolitan and urban service areas, as shown in Table 1 below.

[16] *Id.*, at para. 41

[17] Comments of the Competition Bureau dated May 15 2019, at para. 6 in the proceeding initiated by *Review of mobile wireless services*, Telecom Notice of Consultation CRTC 2019-57, 28 February 2019.

Table 1[18]: Percentage of reported stations in certain bands[19] located in metropolitan, urban, rural, and remote Tier 5 service areas

Licensee Name	Metro	Urban	Rural	Remote
Rogers Communications Canada Inc. Rogers Communications Partnership Note: Fido excluded	45%	32%	23%	1%
Bell Canada Bell Mobility Inc. Note: Bell MTS excluded	39%	23%	35%	3%
Telus – Regulatory Affairs TELUS Communications Company TELUS Communications Company … SVP - Reg. Affairs TELUS Communications Inc.	35%	41%	23%	0%
Saskatchewan Telecommunications Sasktel Mobility(Cell/PCS) SASKTEL(AWS/PCS) SASKTEL(BRS) Eng. Manager - Wireless Networks SASKTEL(PCS) Eng. Manager - Wireless Network	0%	40%	57%	3%
Vidéotron ltée	62%	24%	14%	0%
Freedom Mobile Inc. Note: Shaw Satellite excluded	66%	31%	3%	0%
Bragg Communications Inc.	0%	53%	47%	0%
Xplornet Communications Inc.	5%	13%	82%	0%

31. Unsurprisingly, the new mobile competitors Vidéotron and Freedom have aggressively built networks in urban areas to build their subscriber bases as quickly and cost-effectively as possible. These new competitors have not used their spectrum holdings to enhance rural connectivity.

32. There are two reasons why new mobile competitors have unused spectrum in rural areas. The first reason is that many auctions have used large geographical service areas. With large service areas, a company that, for example, wishes to deploy service in downtown Toronto must buy spectrum licences that cover extensive adjacent rural areas throughout Southwestern Ontario.

[18] Source data from *Spectrum Licences Site Data* downloaded from https://sms-sgs.ic.gc.ca/eic/site/sms-sgs-prod.nsf/eng/h_00010.html, dated November 4, 2022, and from *Service areas for competitive licensing* downloaded from https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf01627.html, dated December 4, 2020.

[19] Bands included in this data are: CELL, WCS, AWS, 3500B, MBS, BWA38, PCS, BRS, 600B, 3800I, WBS, BWA24, AWS-3, PCSG, RAC, FWA, AWS-4, and FCFS38.

33. The second reason that new mobile competitors hold unused spectrum in rural areas is that they, just like large national carriers, have the means and incentive to foreclose access to spectrum by other carriers and engage in speculation.

34. Even when ISED used Tier 4 service areas in the 3500 MHz auction, the four regional service providers (Videotron, Xplornet, Sasktel, and Eastlink) still won nearly all (88%) of the available set-aside licences. Many of these licences are in rural areas where the new mobile competitors may not have immediate deployment plans. Very few small local carriers were able to win spectrum when competing against these large regional carriers, despite ISED's use of smaller service areas.

35. The incentive to engage in exclusionary conduct in auctions arises in part due to the speculative value of spectrum, which includes the value a company may place on the ability to use it to deploy services at a future date. The incentive also arises from the ability to preclude competition, as noted by the Competition Bureau:

> *"Spectrum is an essential input for any wireless provider wishing to enter a new market and compete. As such, the Big 3 may assign an added value, often called a "foreclosure value", to spectrum holdings due to their ability to preclude competition. Foreclosure value can drive up the price of spectrum creating another barrier for potential new entrants."*[20]

36. New regional competitors experience the same incentive as large national carriers to foreclose access to spectrum that is auctioned.

37. The means to foreclose arises from progressively larger companies' increasingly deeper capital resources through their access to lower-cost financing and broader investor bases. For example, large companies such as NMSPs and RMSPs have access to funding through the Canadian Infrastructure Bank ("CIB"), which provides funding for broadband projects. Small local operators do not have access to CIB funding for broadband projects, due to the small size of the projects that small operators undertake[21]. As telecommunications firms increase in size, they also gain access to lower cost private and public financing, due to their profitability. The stark

[20] Further Comments of the Competition Bureau to Telecom Notice of Consultation CRTC 2019-57 *Review of Mobile Wireless Services*, dated November 22, 2019, at para. 306

[21] For example, the Canadian Infrastructure Bank's Indigenous Community Infrastructure Initiative supports projects with a minimum value of $5 million.

difference in profitability between incumbent service providers and other service providers is evident from the data published by the CRTC in the Communications Market Report, shown in Table 2.

Table 2: EBITDA margins achieved by cable-based carriers, incumbent TSPs, and other service providers (%), 2014-2019[22]

	EBITDA[23]					
Carrier Type	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Cable-based carriers[24]	46.1	45.1	43.5	45.1	42.9	44.4
Incumbent TSPs[25]	37.7	38.7	39.1	38.1	36.6	40.5
Other service providers[26]	-10.5	37.1	16.7	20.7	21.3	19.0

38. With the means and incentive to exclude access to spectrum by other carriers, including spectrum in rural areas, larger operators amass under-utilized rural spectrum holdings while local operators that want to invest in rural broadband infrastructure are unable to access spectrum at auction.

39. Enabling small local operators to access spectrum in auctions will require the aggressive use of spectrum caps and/or set-asides. In the 3800 MHz auction scheduled for 2023, ISED has chosen a cross-band spectrum cap of 100 MHz across a band that extends 450 MHz from 3450 MHz to 3900 MHz. This cap will ensure at least five winners per service area. If we suppose that

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[22] Communications Market Reports - Open Data, Workbook *Data – Comms overview*, Tab M-F9, downloaded from https://crtc.gc.ca/eng/publications/reports/PolicyMonitoring/cmrd.htm, dated October 27, 2022. This data is not available past 2019.

[23] EBITDA means earnings before interest, taxes, depreciation and amortization and is a measure of margin of profitability. Higher EBITDA margins are generally associated with greater profitability. Only companies with Canadian communications revenues greater than 80% of their total revenues were included in the calculation of EBITDA in the table.

[24] Cable-based carriers are former cable monopolies that also provide telecommunications services (e.g. wireline voice, Internet, data and private line, and wireless services). Examples of cable-based carriers include Rogers, Shaw, Videotron, Cogeco Connexion Inc., and Eastlink.

[25] Incumbent telecommunications service providers (TSPs) are service providers which provided local telecommunications services on a monopoly basis prior to the introduction of competition. Examples of Incumbent TSPs include Bell, Sasktel and Telus, as well as small incumbent TSPs like Sogetel Inc. and Execulink Telecom Inc.

[26] Other service providers include wholesale-based service providers and facilities-based service providers that are neither incumbents nor cable-carriers. The figure demonstrates a significant increase in the EBITDA margins of other service providers. This was due mainly to some companies reporting "extraordinary accounting items" in their income statements in 2015 and does not represent a change in their position in the market. The drop in 2016 was due to the reclassification of companies as a result of merger and acquisition activities. Extraordinary accounting items can include a gain or loss from a sale of assets, a write-off and other non-recurring items.

Bell, Rogers, Telus, and one regional operator will each win spectrum in this auction, it is possible that one additional operator might win spectrum. In some cases, this additional operator may be a small local operator. However, if some regional operators wish to obtain spectrum outside of their traditional serving area, there will be limited opportunities for small local operators to win spectrum. Small local operators lack the capital resources to win spectrum against much larger regional operators.

40. If ISED is to succeed at fostering the full utilization of commercial spectrum in rural Canada, additional pro-competitive measures are required in rural areas. Such measures might include:

a. Lower spectrum caps in rural service areas, ensuring more winners. More winners will increase the likelihood that at least one of the spectrum winners will deploy networks in a short time frame. While excessively small spectrum caps will restrict the ability of operators to deploy broadband networks, a modest reduction to the size of spectrum caps in rural areas will support more winners without unduly restricting deployments. For example, the use of an 80 MHz cap instead of a 100 MHz cap in the 3450-3900 MHz band would ensure at least six, rather than five, auction winners in this band and would not preclude high speed FWA network deployment.

b. Additional set-asides in rural service areas that neither national carriers nor regional carriers are eligible for. This will ensure that local operators can participate in auctions.

c. The allocation of some spectrum in rural areas through other non-competitive licensing processes. This will ensure that the spectrum is deployed promptly, rather than held as a speculative asset.

41. Measures that support small operators' success in spectrum auctions would not significantly reduce auction revenues. In the 3500 MHz auction, the ten most highly populated service areas accounted for approximately 73% of the total auction revenues.[27]

42. Measures such as these must be employed in rural areas to ensure that rural Canadians benefit from investment in broadband infrastructure in their communities. If rural and urban

[27] This revenue calculation includes only the final clock round price and excludes the assignment round prices. The auction revenues from the final clock round were $8.831 billion, and the revenues from the final clock round of the ten most populous service areas (Toronto, Montréal, Vancouver, Ottawa/Outaouais, Calgary, Edmonton, Québec, Winnipeg, Guelph/Kitchener, and London/Woodstock/St Thomas) was $6.498 billion. Data sourced from https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11722.html, updated December 20, 2021.

service areas are not treated differently when it comes to spectrum auctions, spectrum will continue to be warehoused in rural Canada, and rural communities will continue to suffer from lower service levels and less choice than urban Canadians.

2.2 Non-auctioned spectrum must support investment by rural network operators

43. Outside of spectrum auctions, there are few opportunities to access spectrum with high utility.

44. Licence exempt bands, in particular the 6 GHz band, include large quantities of spectrum which can support high throughput services. However, the permitted power levels in these bands are low compared to permitted power levels in auctioned bands. With high throughputs and low power levels, licence exempt bands are suitable for providing high speed connectivity over short distances. Licence exempt bands are also subject to interference that is out of the control of a network operator, further reducing the distance over which reliable connectivity can be maintained. Licence exempt bands are an effective tool for supplementing rural broadband networks, but do not, on their own, support meaningful investment in rural broadband infrastructure.

45. The secondary market for spectrum also does not provide a clear path to spectrum access for small operators. As Canada's Auditor General observed,

> *We found that … [t]he secondary market for unused spectrum did not function well, partly because licensees had little business incentive to make unused spectrum available for subordinate licensing. In addition, the information on unused spectrum was not readily available to interested Internet service providers.*[28]

And

> *We found cases in which wireless Internet service providers in need of spectrum to provide their services had difficulty sub-licensing unused spectrum from licensees. This difficulty was partly because the information on unused spectrum was not readily available to interested Internet service providers. For example, the Department did not maintain a user-friendly database on unused spectrum. In some cases, however, it was not in the interests of the primary licence holder*

[28] 2018 Fall Reports of the Auditor General of Canada to the Parliament of Canada, *Report 1—Connectivity in Rural and Remote Areas*, Tabled November 20, 2018 ("Auditor General Connectivity Report"), at para. 1.61.

to sub-license some of its spectrum, even though the primary licence holder's deployment conditions could be met through subordinate licences.[29]

46. Without extremely aggressive incentives from ISED, the secondary market for spectrum will continue to be challenging, given the absence of meaningful business incentives for primary licensees to subordinate their spectrum.

47. ISED has taken steps toward providing access to non-auctioned spectrum for operators that will serve rural and remote Canadians through several recent consultations and decisions:

a. SLPB-004-21, Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment ("Access Licensing Consultation");

b. SPB-003-22, Consultation on a Non-Competitive Local Licensing Framework, Including Spectrum in the 3900-3980 MHz band and Portions of the 26, 28 and 38 GHz Bands ("NCL Consultation"); and

c. SMSE-006-21, Decision on the Technical and Policy Framework for Licence-Exempt Use in the 6 GHz Band.

48. Access to non-auctioned spectrum provides an important path for small local operators to provide connectivity services to homes and businesses in their communities. The utility of all spectrum, especially non-auctioned spectrum, depends on:

a. Suitable propagation characteristics for the intended application;
b. Sufficient quantity;
c. The availability of a broad equipment ecosystem;
d. The ability to deploy high power stations;
e. Certainty of access;
f. Affordability; and
g. The ability to manage interference.

49. ISED's proposal for access licensing, described in the Access Licensing Consultation, is an innovative and farsighted framework that would enable spectrum access in many remote areas. Access licensing has the potential to support network deployments in some of Canada's most poorly served areas. Under the proposal described in the Access Licensing Consultation, benefits to rural Canadians would be limited to the most remote homes and businesses; access licensing

[29] *Id*., at para. 1.79.

would not support widespread rural broadband investment. In most rural Tier 5 service areas, spectrum licence holders would be easily able to install small token deployments in small urban areas. These token deployments would block local operators from obtaining access licences, and would not result in the provision of any services in the surrounding underserved rural areas. If the access licensing framework were to be expanded to more spectrum bands and use more granular service areas, the access licensing proposal would have the potential to stimulate significant improvements to rural connectivity by providing more opportunities for investment by local service providers.

50. ISED's proposal for non-competitive local licensing, described in the NCL Consultation, is based on the fundamentally correct understanding that allowing more spectrum access through non-competitive means will support more investment and innovation. However, as CanWISP has described in comments in that consultation, the proposed implementation of non-competitive local licensing does not support rural broadband infrastructure investment[30].

51. Mechanisms such as access licensing and non-competitive local licensing are necessary because spectrum auctions do not support the successful participation of small and local service providers. If spectrum auctions can be designed to support a broad variety of primary licensees, from the largest corporations to the smallest local organizations, rural Canadians would benefit from better connectivity and more consumer choice.

3. ISED SHOULD IMPLEMENT OTHER MEANS TO FOSTER RURAL CONNECTIVITY

3.1 Deployment requirements must target rural connectivity

52. Deployment requirements can be powerful tools to ensure that spectrum is not held for the purpose of speculation, but is used for the benefit of Canadians.

[30] ISED's proposals that would thwart rural broadband infrastructure investment include a spectrum cap of 20 MHz, an aggregate area limit of 5%-20% of a Tier 5 service area, a one-year licence term, and an unaffordable fee structure. Further, there is no current equipment ecosystem for fixed wireless access networks in the 3900-3980 MHz band. See Comments of the Canadian Association of Wireless Internet Service Providers in the consultation initiated by SPB-003-33, *Consultation on a Non-Competitive Local Licensing Framework, Including Spectrum in the 3900-3980 MHz Band and Portions of the 26, 28 and 38 GHz Bands*, October 11, 2022, at paras. 33, 39, 44, 51.

53. However, as the Auditor General observed:

> *We found that the deployment conditions did not provide a strong enough incentive for licensees to offer services outside the major urban centres covered by their licences. This resulted in unused licensed spectrum in rural and remote areas of Canada.*[31]
>
> and
>
> *The Department adopted more stringent deployment conditions for the 600 MHz auction in 2019. The aim was to facilitate timely availability of services across the country, including in rural and remote areas. Despite these enhancements, Internet service providers will not be required to meet deployment conditions in the smallest population areas until the end of the 20-year licence period. As a result, the new deployment conditions may leave many rural and remote households underserved at the end of the licence period.*[32]

54. The deployment requirements imposed by ISED enable primary licensees to hold extensive amounts of undeployed spectrum in rural areas simply by installing a small number of base stations in a town in the relevant service area. More granular deployment requirements would ensure that spectrum is put to use in underserved rural communities.

3.2 Tier 5 and grid cell service areas must be used to target broadband connectivity improvements in rural communities

55. ISED has proposed the use of Tier 5 service areas for the auction of spectrum in the 26/28 and 38 GHz bands[33], and has used Tier 4 service areas in the 3500 MHz auction. The use of smaller geographic service areas has the potential to enable small rural operators to participate more effectively in spectrum auctions.

56. CanWISP observes that numerous underserved rural households can be found in Tier 4 service areas that contain major cities. For example, the National Broadband Map shows numerous areas where less than 25% of households have access to 50/10 Mbps service in the 4-136 Calgary Tier 4 service area, as shown in Figure 1.

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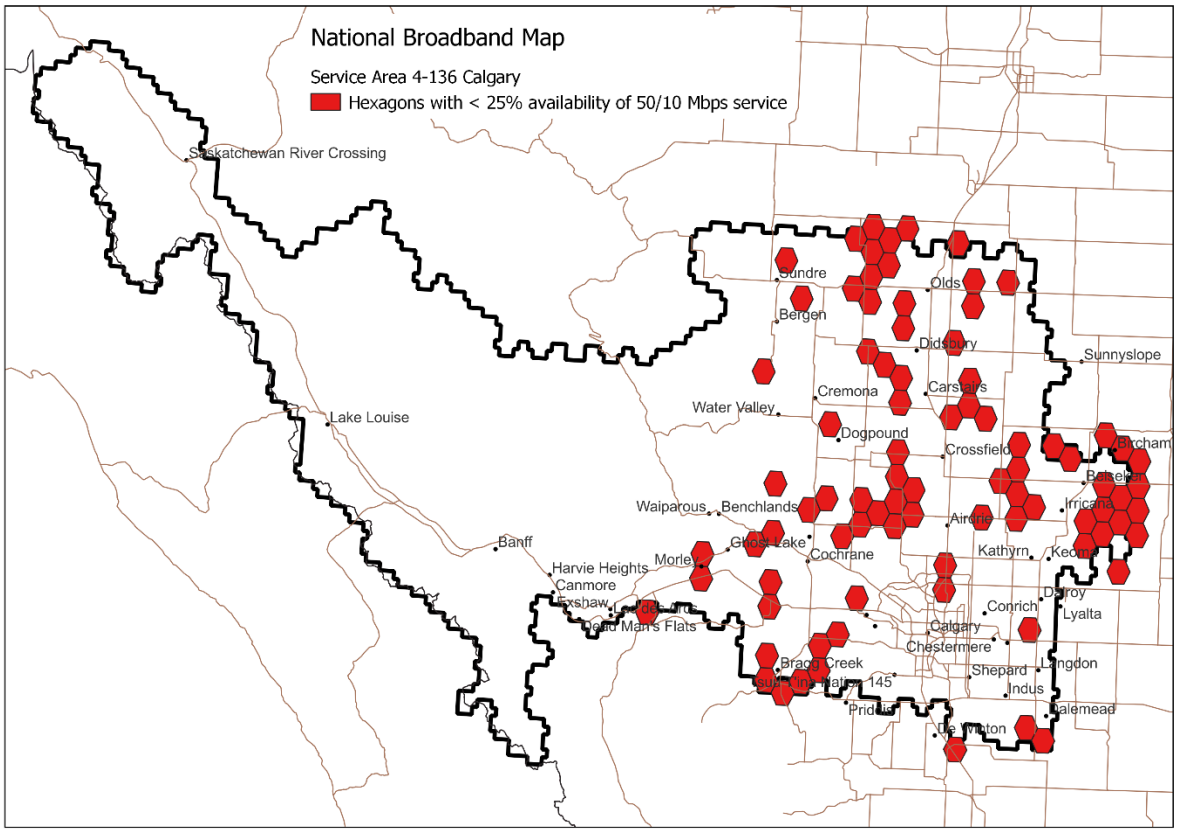
31 Auditor General Connectivity Report, at para. 1.73

32 *Id*., at para. 1.75

33 SPB-001-22, Consultation on a Policy and Licensing Framework for Spectrum in the 26, 28 and 38 GHz Bands, dated June 2022, at Q24

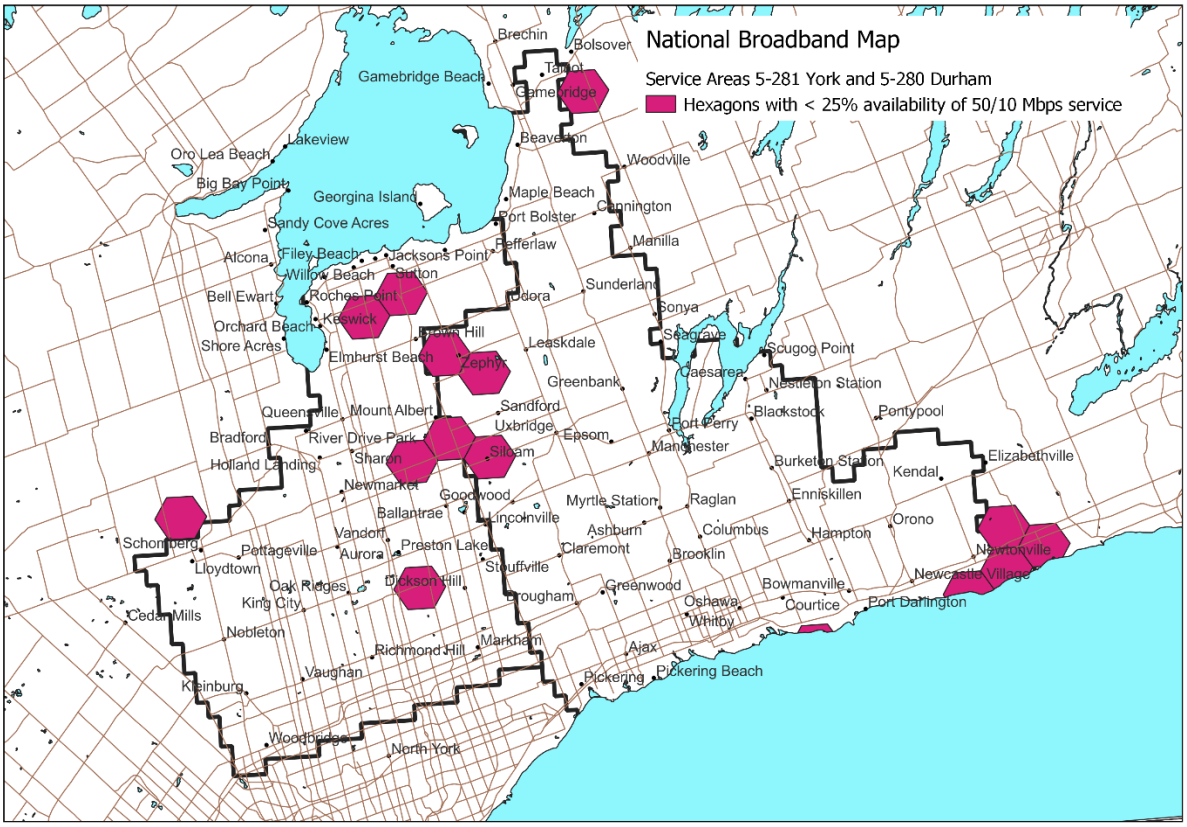
Figure 1: 50/10 Mbps availability in service area 4-136 Calgary[34]



57. This issue can be mitigated through the use of Tier 5 service areas for spectrum auctions, though it is noteworthy that even metropolitan Tier 5 service areas contain rural underserved areas. Figure 2 shows that some areas where than 25% of households have access to 50/10 Mbps service can be found even in the metropolitan Tier 5 service areas of 5-280 Durham and 5-281 York.

[34] Data from National Broadband Data, "NBD Map" dataset, downloaded November 15, 2022 from open.canada.ca.

Figure 2: 50/10 Mbps availability in service areas 5-280 Durham and 5-281 York



58. It is clear from the prevalence of underserved households in metropolitan and urban service areas that Tier 4 service areas, and even Tier 5 service areas, fail to target underserved rural households.

59. ISED can advance rural connectivity by using Tier 5 service areas in spectrum auctions, combined with measures to support small and local service providers' access to auctioned spectrum such as modestly lower spectrum caps and additional set-asides for these small carriers.

60. ISED can also stimulate the construction of new networks in underserved rural communities by using service areas smaller than Tier 5, for example grid cells, in deployment requirements and any future access licensing mechanism.

61. While smaller service areas may increase the potential for interference, the increased burden of interference coordination is a manageable and acceptable trade-off against the increased rural connectivity that is made possible by the adoption of smaller service areas.

3.3 Maintenance and expansion of the broadband mapping program will focus investment on underserved areas

62. In January 2022, ISED stopped accepting new wireless coverage submissions to the National Broadband Map[35]. From this time until October 2022, ISED did not update the online National Broadband Map.

63. The National Broadband Map is a key tool used by funding programs across Canada to evaluate funding applications. Many different levels of government have come to rely on this tool for broadband availability information. This tool should be regularly maintained and kept up to date so that funding programs can rely on this information.

64. CanWISP notes that the Federal Communications Commission requires facilities-based broadband providers to provide coverage information twice a year[36].

65. ISED should ensure that National Broadband Map is updated regularly with current and accurate coverage information. It may be appropriate to include coverage updates in the mandatory annual reporting that is required of all spectrum licence holders. Obligatory coverage reporting will expand the broadband mapping program to include operators that may not be participating today, increasing the accuracy of the National Broadband Map.

66. An accurate and current National Broadband Map will enable funding programs and private investors to target underserved areas. More accurate targeting of underserved areas will result in more rural communities gaining access to 50/10 Mbps speeds faster, and at lower cost.

[35] National Broadband Internet Service Availability Map, available at https://www.ic.gc.ca/app/scr/sittibc/web/bbmap#!/map.

[36] Fixed Broadband Deployment Data from FCC Form 477.

3.4 Spectrum must be affordable in rural areas

67. ISED's modernization of the fee structure for microwave point-to-point licences[37] has stimulated increased investment by CanWISP members in high-speed microwave backbone links. With affordable prices for gigabit and multi-gigabit links, small operators in rural communities have upgraded their backbone links to provide faster services in the communities they serve.

68. Affordable spectrum prices will stimulate wireless network construction in rural areas where spectrum is currently under-utilized. In determining fees for spectrum in rural areas, ISED should avoid a fee structure that discourages or limits deployments in underserved areas, including rural, remote, and First Nations communities, and large sparsely populated regions such as agricultural communities and those along highways. In the response to the NCL Licensing Consultation, CanWISP proposed a fee structure that would support investment in underserved areas.[38]

4. SPECTRUM ACCESS FOR SMALL OPERATORS WILL FOSTER COMPETITION AND AFFORDABILITY IN RURAL CANADA

69. As discussed in the introduction, while ISED's spectrum policy has brought about considerable progress in wireless services competition and affordability in parts of Canada, new mobile wireless competitors have not yet had a significant impact in rural communities. Small local operators, however, have worked hard to bring lower fixed broadband prices, better service, and more choice to these communities despite facing a chronic lack of spectrum.

70. Without small local competitors, rural communities and remote households are condemned to wait for broadband access until a dominant incumbent carrier sees fit to build new networks in their area. Without local operators, rural families have no choice but to pay a non-competitive price for broadband service. Without small independent service providers, local governments have no connectivity option except to appeal to incumbent carriers. Small, local, rural-focused service providers are frequently able to deliver broadband connectivity at higher speeds and lower costs

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[37] DGSO-004-19, *Decision on the Licence Fee Framework for Fixed Point-to-Point Systems*, July 2019.

[38] Comments of the Canadian Association of Wireless Internet Service Providers in the consultation initiated by SPB-003-33, *Consultation on a Non-Competitive Local Licensing Framework, Including Spectrum in the 3900-3980 MHz Band and Portions of the 26, 28 and 38 GHz Bands*, October 11, 2022, at the responses to Questions 22 and 24.

than the dominant incumbent carriers. Ensuring the viability of these small, local operators is in the interest of all Canadian consumers.

71. For over a decade, the WBS band demonstrated the significant positive outcomes of spectrum access in rural communities. Rural service providers across Canada built networks that delivered reliable and affordable high-speed internet to rural homes, cottages, farms, and businesses. During the COVID-19 pandemic, these networks supported increased demands as many Canadians engaged in work, school, and social activities from rural locations. Rural operators who want to invest in improving and expanding their services are facing displacement from the WBS band. These operators need access to useable spectrum to continue to invest and grow and bring better services to rural consumers.

72. By ensuring that small local service providers have the tools to build broadband infrastructure, ISED will advance the goal of ensuring that all Canadians have access to broadband internet service. By ensuring that rural service providers have access to useable spectrum, ISED will foster affordable and competitive services in rural communities.

73. Policies that enable small local carriers to access spectrum, via both auctions and other means, will foster choice and robust competition in markets for telecommunications services in Canada in a manner that that will serve the needs of all Canadians. Policies that support spectrum access for rural operators cost little, and have an immense impact on rural connectivity.

74. CanWISP thanks ISED for the opportunity to provide these comments.