Innovation, Science and Economic Development

Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment

Notice No. SLPB-004-21

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1. My name is Gregory Taylor and I am an Associate Professor at the University of Calgary, where I specialize in communications policy. I am also the principal investigator of a SSHRC-funded research project exploring 5G wireless and rural Canada. I appreciate the opportunity to submit to this consultation for Innovation, Science and Economic Development Canada (ISED)'s *Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment.*

2. While there is much that is commendable in this proposal from ISED, I belive it is necessary to point out that ISED is now playing catch up for past mistakes regarding weak deployment conditions. Stronger deployment conditions of license could have helped close the rural digital divide years ago. The real missed opportunity was the 700 MHZ auction in 2014 that offered low frequency spectrum that was particularly well suited to Canada's rural areas, given its strong propagation characteristics. However, Industry Canada's policies for this prime spectrum were decidedly underwhelming and put rural Canada at a disadvantage. The conditions of license for this key spectrum noted that 700 MHz license holders were obliged
   a. to cover 90% of the population of its HSPA network footprint as of March 2012, within five years of the issuance of the initial 700 MHz licence; and
   b. to cover 97% of the population of its HSPA network footprint as of March 2012, within seven years of the issuance of the initial 700 MHz licence
   (Industry Canada, 2013bPar 305).

3. There was no new deployment territory required for this spectrum, access to which was the driving force behind Canada's national digital television transition. This was a squandered moment for the connectivity of rural Canada.

4. Notice No. SLPB-004-21 is a broad consultation document, so I will only be able to reply to some of the questions put forward. This should not be seen as diminishing the other questions, more the challenge of individually responding to government consultations during the fall term.

   Remote Rural Broadband Systems

5. **Q49**
   ISED is seeking comments on its proposal to no longer renew existing RRBS licences after March 31, 2027.

6. In 2018, I published a paper entitled Remote Rural Broadband Systems in Canada in the journal Telecommunications Policy (Taylor, 2018) in which I speak of RRBS as a "bold policy initiative" by Industry Canada (later ISED). The RRBS policy has been on life support since ISED issued a moratorium in 2014 in the repurposing of 600 MHz

spectrum. This is unfortunate as I found RRBS to be an innovative approach to rural access, particularly for northern areas of Canada. Though the RRBS moratorium was scheduled to be lifted in 2022, many service providers and equipment suppliers by now have understandably abandoned further development, so this decision to not renew RRBS will likely have little resistance. In my paper I note the declining fortunes of RRBS and comment "What is not so apparent is whether or not the current problems faced by RRBS are due to inherent limitations of the policy itself or if the Canadian government chose to allow RRBS providers to whither on the vine while plans are made for yet another spectrum auction." I now believe the RRBS problems are by and large due to regulatory abandonment, made official by this consultation's plan to stop renewing RRBS licenses after 2027. I spoke with providers who had success with RRBS but did not feel secure in making long term investments in technology for this approach. They were correct.

7. There seems to be an intentional effort on behalf of ISED to downplay RRBS in this current consultation document. Paragraph 169 notes that the RRBS program was only available for "seven years" before the moratorium was enacted; while the very next paragraph describes "nearly a decade of spectrum availability" (170). Why does the regulator see it as necessary to equate seven years as essentially ten, unless they are keen to exaggerate the sense of shortcoming? I have long argued against 20-year licenses for auctions, to be rebuffed every time by a regulator who sees 20 years as necessary for deployment, yet RRBS operators were only given seven years to show results before the entire program was scuttled.

8. White Space does not have the same level of commitment from the government at RRBS. As noted in the consultation "Unlike WSD, which use automated spectrum database systems, RRBS systems are licensed on a site-by-site basis" (168). RRBS received a commitment from the regulator, whereas WSD relies on an only recently announced national database service (Canada, February 25, 2021). RRBS has been abandoned for a largely unproven new facility.

9. After a seven-year moratorium, it is likely now too late to resuscitate the RRBS program, but I remain unconvinced the shortcomings lie in the policy itself. To say in the consultation that RRBS success was restricted due to "limited population numbers and market size" (169) is again misleading as these are precisely the reasons RRBS was allowed to develop in these regions in the first place (hence the name "rural and remote").

White Space Database

10. **Q47**
ISED is seeking comments on its proposal to remove the current restriction on database hosting in order to facilitate cloud-based database hosting solutions.

11. This question regarding White Space data base hosting brings up clear issues of national security. In the Framework for the Use of Certain Non-broadcasting Applications in the Television Broadcasting Bands Below 698 MHz (Industry Canada, 2013a), ISED notes

"the importance of adequate security measures to protect data and ensure reliable operation" (6.2.3.2). I do not have expertise in matters of security in this area but clearly the current approach does seem inconsistent with 2013. If Canada still sees fit to restrict foreign ownership of all national ISPs with more than 10% national market share, why would it be OK to turn over control of our spectrum availability knowledge to a foreign cloud-based entity? In 2021, RED Technologies became Canada's first White Space Data Base administrator. The policy change outlined in this consultation seems to be based upon accommodating France-based RED technologies, which is the only company to facilitate this service since TVWS devices were officially accepted in Canada in 2014. I'm not convinced the previous policy requirement to keep data centres in Canada has been the source of poor success of acquiring a host for a White Space data base.

12. The government of Canada first announced the Spectrum Analytics Centre as part of the Digital 150 2.0 announcement in 2015 (Industry Canada, 2015). It was announced again in 2017 by the Liberal government as part of the Big Data Analytics Centre at the Communications Research Centre in Ottawa (Jackson, 2017). The government's unveiling of the Big Data Analytics Centre noted that the
    a. "one-of-a-kind research lab collects and analyzes vast amounts of data on Canada's wireless spectrum, which is a public resource that's regulated by the Government.
    b. The research being conducted at the Big Data Analytics Centre will allow the Government to predict where on the wireless spectrum there are unused radio waves that can be put to work to ensure that the wireless networks Canadians depend on are reliable and accessible, regardless of traffic load"

    (Canada, May 8, 2017).

13. That certainly sounds like a spectrum data base. Where is it in 2021? Is this cloud-based service housed beyond Canada's borders truly necessary? Why must we farm out a service that has previously been announced, repeatedly, by a government that has just won a third term?

Access Licensing

14. **Q1**
    ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licences available in rural and remote areas where there is unused spectrum.

15. There is much that is commendable in the access licensing approach. This is clearly the successor to the RRBS program and has potential to open spectrum access in rural and

remote areas. The ability to for access license holders "to deploy on an immediate basis" (45) is welcome for those in the areas affected.

16. **Q6:** ISED is seeking comments on adopting a flexible use licensing model for fixed and mobile services when issuing access spectrum licences.

17. The flexible license approach will allow providers to offer a range of services beyond fixed wireless. I see this as advantageous for smaller players who may be priced out of auctions but have a customer base demanding a range of services. The flexible license approach is the correct one for this policy.

18. **Q2**
ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis.

19. The recent past has not shown great success in first come first serve approaches. In 1982, some of the very first cellular licenses in the United States were offered via lottery by the FCC to speed up the process. The result was a flood of 400,000 applications. A lottery isn't quite the same as first come first served but it shares the lack of any kind of vetting procedure. When announcing the initial RRBS program in 2007, Industry Canada announced that licenses would be reviewed on a first come first serve basis and that "the Department will permit as many applicants as the spectrum availability permits within a particular geographical area" (Industry Canada, March 2007). The result was over 500 licenses were granted in the first years of the RRBS program but very few saw actual deployment. No one wants to get bogged down in excessive bureaucracy but there is clearly a balance to be struck between an administrative paradigm and an open call. I recommend some sort of vetting process to ensure access license holders have a clear plan. The three-year license term **(Q14)** is sound but would lead to unnecessary tying up of the spectrum if the access license holder was simply speculating and did not have a clear strategy. First come first served on a three year license could also be used as a way to game the system to keep it out of competitors' hands.

20. I also see potential problems with applying the same deployment conditions common for primary spectrum holders for access license holders (**Q 16).** Deployment conditions are usually based upon reaching a certain level of the population within a set time frame. Given the rural and remote nature of much of the area in question, I do not believe hitting population targets is the proper measurement of success.

Subordinate Licensing

21. **Q45**

    ISED is seeking comments on facilitating subordinate licensing and encouraging secondary market transactions including:
    - Should additional changes be made to existing licences that will encourage the use of subordinate licences as a means to help deploy more services?
    - Given ISED's regulatory role, are there any issues or actions ISED should consider?

22. The difficulties outlined in this consultation regarding subordinate licensing agreements are similar to what I have heard when in discussion with small wireless ISP services: they either had difficulty initiating discussions on subordinate agreements or found the primary license holders were not open to a subordinate agreement, shutting the smaller providers out of the market while the spectrum sits idle. ISED clearly has a role to play here as previous market-based approaches have not worked to get maximum public value from the spectrum. In this consultation, ISED outlines areas for discussion:

    - establishing timelines for a licensee to respond to a request to enter into a subordinate agreement
    - requiring that the Primary Licensee provide valid reasons for refusing to enter into a subordinate arrangement (e.g. an imminently planned deployment)
    - potential consequences for failing to respond to a request

23. I strongly support all three of these initiatives and hope all are implemented. Primary license holders still have an obligation to the public who are the legal owners of the spectrum. They should not be able to simply ignore requests as they have done in the past.

    Conclusion:

24. In a 2018 CRTC prize-winning essay by Kris Joseph entitled "Analysis of Canadian Wireless Spectrum Auctions: Licence Ownership and Deployment in the 700 MHz, 2500 MHz and 3500 MHz Frequency Ranges", the author notes the lack of deployment in some bands and concludes "short timelines and bold deployment requirements may encourage infrastructure investment…(deployment) targets can be more aggressive" (Joseph 2018). I have echoed this call for stronger deployment conditions in my own work and in previous submissions to ISED. These new initiatives should not take away from the imperative to make license holders accountable when it comes to using the public frequencies. It is my hope that access licenses become the norm.

25. There is much that is commendable in this consultation, and I am pleased to see creative, forward-thinking policy; however, I am left with pertinent questions beyond this consultation and perhaps the ISED mandate, but I would like to raise since public participation is often limited in this zone of Canada's connectivity (Shepherd, 2014). One is the place of indigenous rights to spectrum, particularly in the rural and remote areas outlined for access licenses. In the 2020 Indigenous Connectivity Summit hosted by the Internet Society, one of the key policy recommendations was "Federal regulators must therefore ensure that Indigenous governments, Indigenous-owned entities, and

communities have first rights to the spectrum over their lands" (Internet Society, 2020). ISED needs to be at the forefront of making this a reality. I believe this should have been recognized in this consultation.

26. The other key element is about access to fibre. All wireless enters a wire at some point. All this access to spectrum will not lead to a growth of small, rural ISPs unless they also have access to the fibre required for high speeds and transmission to exchange points outside their jurisdiction. I hope that ISED will work in cooperation with the CRTC to ensure full connectivity in underserved regions.

27. Thank you for this opportunity to participate.

Yours Sincerely,

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Comments Submitted for *Consultation on a New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment (SLPB-004-21)*

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October 25, 2021

Submission of Kris Joseph and Michael B. McNally

Executive Summary

ES1. We are grateful to Innovation, Science and Economic Development (ISED) for the opportunity to participate in its *Consultation on a New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment* (SLPB-004-21).[1] We recognize that perspectives from individual contributors -- in our case, academics -- are rare, and value the opportunity to weigh in on important policy decisions affecting the state of high-speed broadband access in rural and remote areas, including Indigenous communities.

ES2. In general, our responses reflect the belief that ISED must balance both the "social" and "economic" benefits outlined in the *Spectrum Policy Framework for Canada*,[2] and that recent decisions have tilted the balance too far to the economic side. The proposed Access Licensing Framework provides a compelling opportunity for service deployments that benefit rural and remote communities, Indigenous governments, and public good oriented users (e.g. health and education). Wherever possible, ISED should remove access barriers for groups that can evince a social benefit from their service deployments.

ES3. While the Consultation aims to address many aspects of spectrum availability for rural and remote communities, regardless of the outcome of this consultation, we feel the Department should undertake a broader more holistic review of spectrum policy. Specifically, ISED should undertake a separate consultation on the *Spectrum Policy Framework for Canada* (*SPFC*) in 2022, which corresponds to the 15th anniversary of the current *SPFC*. Such a consultation, with broad engagement, will best position spectrum policy to benefit Canadians economically and socially, help meet the ever growing demand for spectrum, and more effectively align spectrum policy with the Government of Canada's[3] and Canadian Radio-televisions and Telecommunications Commission's[4] (CRTC) goals of universal access (at target speeds with unlimited data options[5]).

Introduction

1. The proposed Access Licensing system and related proposed changes to subordinate licensing and the Rural Remote Broadband System (RRBS) policy represent significant changes to spectrum policy for rural and remote communities and Canadians. ISED should be applauded for continuing to seek measures to ensure rural and remote access to spectrum. However, as indicated in responses below to specific

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[1] Herein referred to as "The Consultation."

[2] Industry Canada. 2007. *Spectrum Policy Framework for Canada.* https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/spf2007e.pdf/$FILE/spf2007e.pdf p. 8 (herein "*SPFC*")).

[3] Prime Minister of Canada. 2020. "Connecting all Canadians to High-Speed Internet." https://pm.gc.ca/en/news/news-releases/2020/11/09/connecting-all-canadians-high-speed-internet. ISED. 2019. *High-Speed Access for All: Canada's Connectivity Strategy*. https://www.ic.gc.ca/eic/site/139.nsf/vwapj/ISEDC_19-170_Connectivity_Strategy_E_Web.pdf/$file/ISEDC_19-170_Connectivity_Strategy_E_Web.pdf p. 8. (herein *High Speed Access for All*).We additionally note that the Liberal Party in its election platform has suggested universal access as early as 2025 (Liberal Party of Canada. 2021. "Connecting Rural Canada." https://liberal.ca/our-platform/connecting-rural-canada/).

[4] Canadian Radio-television and Telecommunications Commission (CRTC). 2016. "Telecom Regulatory Policy CRTC 2016-496." https://crtc.gc.ca/eng/archive/2016/2016-496.htm

[5] See infra, para. 3 for a discussion of the importance of inclusion of unlimited data plan options.

questions, several areas of concern remain. At the broadest and most fundamental level, Access Licensing appears to align more strongly with only one part[6] of the objective of the *Spectrum Policy Framework for Canada* (*SPFC*) - that is maximizing economic benefit. As is, and as noted, it is unclear how social benefits are given equal consideration in the proposed system.

2. Despite the imbalance and likelihood that Access Licensing and other changes will result primarily in economic benefit, and in many cases private economic benefit, we applaud efforts to increase rural and remote access to spectrum and acknowledge the importance of spectrum in meeting the goal of ensuring high quality, reliable and affordable broadband services are available to all Canadians.[7] Though public institutions are mentioned in the consultation document,[8] it is worth noting that delivery of critical health, education, and government services are hindered by a lack of access to broadband in rural, remote, and Indigenous communities.[9]

3. As suggested by ISED in the consultation document[10] rural and remote spectrum is a key element in meeting the universal access to target speeds of 50 Mbps download and 10 Mbps upload.[11] However, we also emphasize that the Canadian Radio-television and Telecommunications Commission's (CRTC) 2016 universal target also included that provision that such speeds be available without data caps/in unlimited plans,[12] which is not emphasised in either the Consultation or *High Speed Access for All*.[13]

4. Given the substantial changes proposed (and decision in regard to Radio Systems Policy 019 (RP-019)) within the consultation document, we feel that this consultation serves as a starting point to a new discussion and consultation on the *SPFC*. By the time the Department releases a decision on Access Licensing the *SPFC* will be almost 15 years old. Its central enabling guideline (maximizing market forces)[14] reflects a now outdated ideology of then Industry Minister Maxime Bernier, and the naive and

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[6] The construction of the sole policy objective in the *SPFC* clearly uses "and" when discussing economic and social benefit ("To maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum resource" (Industry Canada. 2007. *Spectrum Policy Framework for Canada*. This construction indicates a significant degree of equivalence between social and economic benefit should be evinced in spectrum policy.

[7] Telecommunications Act, s. 7.

[8] The Consultation, para. 5.

[9] For example Statistics Canada highlights the challenges faced by rural communities due to lack of internet access during the COVID-19 pandemic. Statistics Canada. 2021. "Canadians' Well-being in Year One of the COVID-19 Pandemic" https://www150.statcan.gc.ca/n1/pub/75f0002m/75f0002m2021003-eng.htm.

[10] Innovation, Science and Economic Development Canada. 2021. "Consultation on New Access Licensing Framework, Changes to Subordinate Licensing and White Space to Support Rural and Remote Deployment." SLPB-004-21. https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11717.html para. 13 (herein "the Consultation").

[11] The Consultation, para. 13; ISED. 2019. *High-Speed Access for All*. p. 8.

[12] CRTC. 2016. "Telecom Regulatory Policy CRTC 2016-496." https://crtc.gc.ca/eng/archive/2016/2016-496.htm para. 97.

[13] *High Speed Access for All* does make mention of unlimited data plans in reference considering unlimited plans in relation to affordability (p. 13), but the omission of including this as an element of the government's targets (as opposed to that of the CRTC) is a notable and problematic omission.

[14] *SPFC*, p. 9.

optimistic conclusions of the Telecommunications Policy Review Panel, which characterized the Canadian market as "dynamically competitive."[15]

5. We appreciate the ongoing efforts of ISED to engage with Canadians on the issue of spectrum management. We discuss several of the specific questions below and provide a final set of comments in the conclusion that raise several further actions the department can take to improve connectivity for rural and remote Canadians. We recognize that improving connectivity is a challenging issue; however, to help frame our comments we wish to highlight a finding that has emerged from many years of community based discussion[16] and research among communities in Alberta and beyond. Achieving better connectivity in rural and remote communities is roughly:

- ~10% a financial issue
- ~10% a technology issue, and
- ~80% a social issue[17]

To have the maximum economic and social benefit arise from Access Licensing, ISED should consider not only the technical and technological aspects of licensing but also social enablers and barriers in rural and remote communities. Our comments provide further discussion with regard to specific questions on where some consideration of the social element is needed.

6. Finally, we thank ISED for extending the comment and reply comment period for this consultation. We suggest ISED consider a further extension of the reply comment period (beyond December 7, 2021) if there is a substantial volume of comments submitted to permit interested parties to fully participate and review the submissions of others. While expedient timelines are important for a responsive regulatory regime, many of the participants and those affected do not have large regulatory affairs departments staffed with multiple technical and legal experts.

Responses to Specific Questions

Q1 ISED is seeking comments on its proposal to implement a new Access Licensing framework to make licences available in rural and remote areas where there is unused spectrum.

7. In general, we support the Department's aim to increase access to spectrum in rural and remote communities via Access Licensing. Research has repeatedly shown that access to spectrum is a significant barrier in Canada,[18] serving as a bottleneck for the provision of broadband services. While the

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[15] Canada - Telecommunications Policy Review Panel. 2006. *Telecommunications Policy Review Panel: Final Report.* https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/tprp-final-report-2006.pdf/$file/tprp-final-report-2006.pdf p. 3-3.

[16] With regard to community discussion, much of this occurred between 2013 and 2018 at a series of "Digital Futures" symposia and more recently via the Alberta Rural Connectivity Forum in 2021.

[17] Michael B. McNally. 2021. "Broadband 101." *Alberta Rural Connectivity Forum*, 23 Mar. 2021. https://www.youtube.com/watch?v=_9p7rW_wNlQ

[18] Michael B. McNally, Dinesh Rathi, Kris Joseph, Jennifer Evaniew, and Amy Adkisson. 2018. "Ongoing Policy, Regulatory and Competitive Challenges Facing Canada's Small Internet Service Providers." *Journal of Information Policy, 8*, https://doi.org/10.5325/jinfopoli.8.2018.0167 p. 185-187; Kris Joseph.

framework's potential for economic benefit is valuable, it must be noted that gaps in communication access have an outsized effect on Indigenous communities. One recent report highlights that 0% of Saskatchewan's First Nations have access to services at the CRTC's target 50/10 rate.[19] The Communications Monitoring Report (2020) notes that just more than a third of First Nations reserves have access to 50/10 and unlimited data,[20] and there is no availability of such plans in the three territories.[21] Disparities in 4G access (what should now be considered 'last gen' mobile wireless) are pronounced as well. The gap between urban and rural LTE coverage is as high as 10% in some provinces (Manitoba and Newfoundland and Labrador), and 15% in the Northwest Territories.[22] In general, the worst-off areas are the ones where expensive wireline plans drive the greatest need for spectrum based connectivity.[23]

8. While acknowledging international trends and highlighting the importance of spectrum sharing, ISED has not mentioned the emergence of community-based or peer-to-peer networking solutions for LoRaWAN and 5G applications such as FreedomFi and the Helium Network.[24] We encourage ISED to take these novel, open approaches to community broadband development into consideration as the Access Licensing framework evolves.

Q2 ISED is seeking comments on its proposal to issue access spectrum licences and access radio licences on a first-come, first-served basis.

9. Offering Access Licences on a "first-come, first-served" basis should help incent certain applicants; however, it must also be recognized that certain classes of potential beneficiaries from rural and remote spectrum usage may not even have the ability to "come" let alone be served. Rural and remote communities, Indigenous governments, and public good oriented users (e.g. health and education) who themselves are not telecommunication service providers will continue to face significant barriers in terms of having capacity to apply for and benefit from Access Licences.

10. Since licensees will need to align issues of technology (specifically the hardware ecosystem), frequency/band and geography (Tier 5 based Access Licences), the proposed framework creates friction for newcomers and interested public entities. Accordingly, it is likely that primary potential licensees will be telecommunications service providers and private companies. While rural and remote communities, Indigenous governments and public good oriented users can partner or work with service providers in a

2018. "Analysis of Canadian Wireless Spectrum Auctions: Licence Ownership and Deployment in the 700 MHz, 2500 MHz, and 3500 MHz Frequency Ranges." *CRTC Prize for Excellence in Policy Research* [2018, Master's Level]. https://crtc.gc.ca/eng/acrtc/prx/2018joseph.htm

[19] Rich, Kyle, Heather Hall, and Grace Nelson. 2021. "State of Rural Canada 2021: Opportunities, Recovery and Resiliency in Changing Times." Canadian Rural Revitalization Foundation. https://sorc.crrf.ca/fullreport2021/.

[20] CRTC. 2020. Communications Monitoring Report 2020. https://crtc.gc.ca/pubs/cmr2020-en.pdf p. 109 (herein "*CMR*").

[21] CRTC. 2020. *CMR*. p. 110.

[22] CRTC. 2020. *CMR*. p. 99.

[23] DigitalNWT. 2021. *DigitalNWT Report to CRTC 2020-367: The State of Telecommunications Services in Canada's Northwest Territories*. https://crtc.gc.ca/eng/archive/2020/2020-367.htm

[24] "FreedomFi." 2021. https://freedomfi.com/. "Helium." 2021. https://www.helium.com/

variety of business models, nothing in the Access Licensing proposal provides capacity for these users to become self-sufficient with regard to deploying telecommunication services.

11. Partnering with private providers will be of limited usefulness given the weak to non-existent market forces in many rural and remote parts of the country.[25] Foundationally, the fact that spectrum lies unused in these areas is proof that market forces have failed to produce sustainable services. Although access to spectrum is a barrier, it is not the only barrier. Continued consideration must be given to areas where market forces cannot be relied upon for competition or even to incent basic service deployment, and where the social benefits of broadband access have not been realized.

12. The proposal for Access Licensing, with its declaration that only areas unserved by large incumbents are eligible for participation, appears to be specifically designed to prioritize private networks and industry based vertical use cases where incumbents have already determined that services are unprofitable. Social benefits may trickle down from these industrial benefits; however, it would appear that these are unclear and potential at best. While there is an argument that economic benefits are better than no benefits at all, consideration should be paid to determining how Access Licensing or other subsequent policy initiatives can provide social benefits as per the sole policy objective in *SPFC*.

Q3 ISED is seeking comments on its proposal to use the rural and remote Tier 5 service areas as the basis to determine the rural and remote areas in which it will apply access licensing.

13. The use of Tier 5 Competitive Service Licensing Areas is a logical starting point. As shown over a decade of consultations, particularly in relation to 3500 MHz,[26] the Tier 4 areas often mix higher population urban areas with rural and in some cases remote areas. 25km^2 hex cell based licensing would provide superior granularity, and may make sense for private networks/industry based vertical use cases,[27] but would present a significant administrative burden on applicants and the Department.

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[25] Competition Bureau. 2019. *Delivering Choice: A Study of Competition in Canada's Broadband Industry.* https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/CSBP-BR-Main-Eng.pdf/$file/CSBP-BR-Main-Eng.pdf p. 15; Canada - House of Commons - Standing Committee on Industry, Science and Technology. 2018. *Broadband Connectivity in Rural Canada: Overcoming the Digital Divide.* https://www.ourcommons.ca/Content/Committee/421/INDU/Reports/RP9711342/indurp11/indurp11-e.pdf p. 20; Michael B. McNally, and Samuel E. Trosow. 2013. "The New Telecommunications Sector Foreign Investment Regime and Rural Broadband." *Journal of Rural and Community Development, 8*(2): 23-43, p. 38 (herein "The New Telecommunications Sector"); Michael B. McNally, Dinesh Rathi, Jennifer Evaniew, and Yang Wu. 2017. "Thematic Analysis of Eight Canadian Federal Broadband Programs from 1994 to 2016." Journal of Information Policy, 7: 38-85. https://www.jstor.org/stable/10.5325/jinfopoli.7.2017.0038 p. 78 (herein "Thematic Analysis").

[26] Specifically, the problem of differentiating between urban and rural Tier 4 service areas was evinced in the 2014 3500 MHz consultation. As noted in the decision, "Most respondents oppose the methodology proposed by the Department to differentiate urban and rural areas…:" (Industry Canada. 2014. *Decision Regarding Policy Changes in the 3500 MHz Band (3475-3650 MHz) and a New Licensing Process.* https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/dgso007-14-3500decision-e.pdf/$file/dgso007-14-3500decision-e.pdf para. 13).

[27] The Consultation, paras. 7, 37.

14. While Tier 5 is a useful starting point, it is important to note that licensing on this level is untested and there are likely to be anomalies with the delineation of the tiers producing different incentive effects for licence applicants. For example, Tier 5-645, Resolute Bay, is among the largest geographically, yet has a population of just 330.[28] While there likely exists considerable interest in spectrum licenses in this tier for a variety of uses (e.g. logistical/transportation), there is also a sole, small population community. What mechanisms will exist to ensure the residents of this tier benefit? Tier 5-247, Caniapiscau, has a total population of 3.7[29] people according to ISED. In contrast, Tier 5-498 Okotoks, a "rural" tier, has a population of 68,431.41 - it is over 18,000 times larger by population. It is difficult to determine exactly how such large differences in population and area will affect the proposed Access Licensing regime, but it is clear that future flexibility may be needed.

15. The borders separating tiers, particularly between "urban" and "rural" tiers, will be particularly important (as the proposed Access Licensing" regime will apply only to "rural" and "remote" tiers). For example in the greater Edmonton area the communities of Spruce Grove, Stony Plain, and Leduc are considered part of the "urban" Edmonton tier, yet Fort Saskatchewan is "rural." In southwestern Ontario, Tavistock, which has a population of 2,955,[30] is urban (part of 5-331, Stratford) yet Ingersoll with a population of 12,757 is rural (5-322, Ingersoll).[31] By virtue of being a large community in a rural tier, Ingersoll stands to benefit from Access Licensing, but Tavistok is excluded from Access Licensing. Canada's two major inter-provincial urban areas - Ottawa-Gatineau and Lloydminster, while not directly implicated by current proposal for Access Licensing - have two different approaches with former being single interprovincial tier and the latter being two separate tiers (despite Lloydminster clearly being the smaller of the two). Some Tiers (e.g. 5-650 (Tłı̨chǫ) and 5-653 (Sahtú)) align relatively closely to distinct Land Claim Agreement areas and specific Indigenous governments; however, there are many areas where Indigenous governments and territories are amalgamated into larger Tier 5 blocks. While ISED did consult on Tier 5 service areas,[32] based on the more limited participation, it is not clear many communities understood the implications or importance of this new set of competitive service areas.

16. While the second best choices - Tier 4 or hex cell areas - are poorer choices, the Department is going to have to accept that some mechanism will be needed to deal with the unforeseen consequences of the current Tier 5 divisions.

Q4 ISED is seeking comments on its proposed principles to be used when considering spectrum licensed or radio licensed bands where the proposed Access Licensing framework will apply.

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[28] ISED. N.d. "Service Areas for Competitive Licensing." https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/h_sf01627.html#tierMap. All subsequent population data is from ISED, unless noted.

[29] We recognize that this data is likely in error.

[30] Statistics Canada. 2019. "Tavistock - Census Profile, 2016 Census." https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E

[31] Statistics Canada. 2019. "Tavistock - Census Profile, 2016 Census." https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E

[32] ISED. 2018. Consultation on a New Set of Service Areas for Spectrum Licensing. DGSO-002-18. https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11446.html

17. ISED's principles are a useful starting point; however, specific additions and clarifications are required. With regard to the principle "the potential to support wireless broadband, private networks, and/or industry vertical use cases" other potential cases should be considered. Specifically, we propose explicit language to encourage uses of:

- Community networks, including specifically not-for-profit community owned networks
- Indigenous networks
- Public good uses cases (e.g. health and education)

18. The Consultation underscores that industrial use cases are being heavily considered (e.g. "agriculture, manufacturing and mining,"[33] "resource extraction,"[34] "mine and factory operators."[35] Such use cases have the potential for economic benefits. While these economic benefits may include employment opportunities[36] and some follow-on social benefits, the spectrum policy objective is "To maximize the economic and social benefits…" not "To maximize economic benefits with potential, imputed, downstream social benefits."

19. Recognizing that social benefit is harder to quantify, we propose that the Access Licensing regime specifically include as a principle the above three use case areas. Furthermore, given the emphasis on rural and remote communities, we suggest that the Department strongly consider that such communities often face the greatest barriers in accessing digital services despite having the greatest need for such services. Rural and remote spectrum policy should aim to overcome the Paradox of Telecommunications,[37] not reinforce it.

20. We also suggest the principle "had adequate time for existing licensees to deploy (e.g. initial license term has lapsed) or time permitted to meet initial deployment requirement has lapsed in the case of bands that were auctioned" should be revised to address two concerns.

21. First, it is not clear from ISED's public reports that proactive checks for compliance with licensees' deployment requirements are being performed. There is also no indication in the proposal for how often ISED will review bands to consider additional offerings under Access Licensing. We would encourage ISED to embrace a proactive approach to compliance and unused spectrum checks by monitoring and analyzing Spectrum Management System data, rather than waiting for a licensee to be "called out" by a third party under, for example, a "use it or lose it" provision.

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[33] The Consultation, para. 7.

[34] The Consultation, para. 16.

[35] The Consultation, para. 24.

[36] It should also be noted that in the Consultation para. 7, the document specifically emphasizes how private networks may enambe "a wide range of automated, robotic and remote operations…" and thus in some cases may actually lead to net employment losses.

[37] Susan O'Donnell and Brian Beaton. 2018. "A 'Whole-Community' Approach for Sustainable Digital Infrastructure in Remote and Northern First Nations." *Northern Public Affairs, 6*(2): 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/

22. Conflicting deployment requirements across tiers and bands suggest the Department should produce a clear timeline indicating when certain bands will become available and to clarify ambiguous cases. For example, the recently auctioned 3500 Mhz spectrum may be made available for Access Licensing in the future. The auction framework has an initial deployment requirement term of five years for Tier 4 regions with major population centres and seven years for tiers without a large population centre.[38] Does this mean that Access Licences in the 3500 MHz band might be available in Tiers 5-401 (La Salle), 5-396 (Lorette), 5-398 (Beausejour), 5-397 (Oakband), and 5-399 (Stonewall) in 2026/27, while the rest of rural and remote Manitoba will have to wait an additional two years?

23. The recent 3500 MHz auction will produce a whole set of 'winners' – less-urban areas on the edges of large population centres with five-year deployment requirements who are now part of "rural" tier 5 areas. By contrast, more rural or remote tiers become comparative 'losers' because Access Licences will not be available in these areas for an additional two years. Such areas are in fact 'double losers' since the original ISED proposal specified five, 10 and 20 year deployment requirements in the 3500 MHz band,[39] and this was extended to seven years for areas without a large population centre.[40] The potential for variegated Access Licence timelines will have to be mitigated in future auctions (e.g. 3800 MHz band).

24. Ambiguity about compliance checks and conflicting criteria for deployment requirements leads to the second concern. We recognize that previous auctions granted exclusive licenses for successful bidders, with terms recently standardized at 20 years (and with a high expectation of renewal). Service providers have argued that they need extended terms to allow for equipment and service deployment. These licence terms are lengthy and drastically exceed existing deployment requirements for applicable licences, so compliance with deployment requirements should be prioritized. Relying on lapsed licence terms positions the Access Licensing framework as a "hand me down" approach to spectrum licensing, where the bands and areas offered under the framework consist of commercially-nonviable frequencies used by outdated technology (such as PCS). By only providing access to less desirable bands, Access Licensing may be condemned to the same limitations that encumbered the now rescinded RP-019.[41] There is no need for the department to repeat past policy failures.

25. The trend toward longer and longer licence terms and longer and longer deployment requirements already works in favour of large providers and against small providers and rural and remote communities. The Department should consider under what conditions "Accelerated Access Licensing" might be well suited to meet the needs of those communities furthest from urban centres and market forces.

Q5 ISED is seeking comments on other principles it should take into account when considering bands where the proposed Access Licensing framework will apply.

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[38] ISED. 2020. "Policy and Licensing Framework for Spectrum in the 3500 MHz Bands - Annex F - General Deployment Requirements." SLPB-001-20. https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11589.html#sF

[39] ISED. 2019. Consultation on a Policy and Licensing Framework for Spectrum in the 3500 MHz Band. SLPB-002-19. https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/SLPB-002-19-2019-09EN.pdf/$file/SLPB-002-19-2019-09EN.pdf p. 105-109.

[40] ISED. 2020. "Policy and Licensing Framework for Spectrum in the 3500 MHz Bands" SLPB-001-20, D25.

[41] McNally and Trosow. 2013. "The New Telecommunications Sector." p. 36-37.

26. As indicated in the response to the previous question, additional use cases should be considered specifically in regards to Community Networks, Indigenous Networks and public good use cases (such as health and education).

27. These cases may suggest the creation of additional frameworks. For example, consider the Federal Communication Commission's (FCC) rural tribal spectrum opportunities for the 2500 MHz and 3500 MHz ranges,[42] or its General Authorized Access (GAA) tier of licences, applied to the range of 3550-3700 MHz as a Citizens Broadband Radio Service (CBRS).[43] Special consideration should also be given to bands held by ISED in the territories including the nine licences from the 3500 MHz auction.[44]

Q6 ISED is seeking comments on adopting a flexible use licensing model for fixed and mobile services when issuing access spectrum licences.

28. We support ISED's proposal of a flexible use licensing model, but caution the Department about situations where unmet deployment requirements in fixed-use bands (such as the 700 MHz range and its current 20-year licence terms in Tier 2) conflict with future Access Licensing offerings in other bands and tiers. This may lead to the need to classify fixed use for a band in one tier, and flexible use in another.

Q8 ISED is seeking comments on any future adjustments to the licence areas for access spectrum licences, including consideration of more localized areas (e.g. smaller than Tier 5).

29. As indicated above (para. 13-16), more localized areas should be considered. Considerations around smaller more localized service areas should occur in two contexts - private networks/industrial use cases, and "Accelerated Access Licences" for communities where the greatest need exists. We also accept that if other use cases are added to the principles (e.g. community networks, Indigenous networks, and public good use cases) that more localized areas may be merited in these cases as well.

30. For the current Tier 5 licensing areas, ISED should establish procedures to allow for reclassification on a case by case basis. Rather than relying on rigid definitions of "metropolitan," "urban," "rural," or "remote," ISED must allow flexibility to address edge cases previously mentioned in this submission (variations in population distribution, geography, or area geometry that create dubious classifications: see paragraph 15 for specific examples).

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[42] Federal Communications Commission. 2019. "Rural Tribal Spectrum Opportunities." Federal Communications Commission. October 24, 2019. https://www.fcc.gov/rural-tribal-spectrum-opportunities.

[43] Federal Communications Commission. 2015. "Innovation in the 3.5 GHz Band: Creating a New Citizens Broadband Radio Service." Federal Communications Commission. March 27, 2015. https://www.fcc.gov/news-events/blog/2015/03/27/innovation-35-ghz-band-creating-new-citizens-broadband-radio-service.

[44] ISED. 2021. "3500 MHz Auction - Provisional Results." https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11722.html

31. Many of the industrial use cases (e.g. mines, agriculture, resource extraction, etc.) have determinate geographic boundaries. While in some cases these are larger (e.g. forestry, oil and gas extraction), there are still distinct boundaries that can be identified. In such cases, the Department should consider hex cell based licences. However, if such applicants can evince both economic and social benefits (e.g. a private network for a resource extraction site and worker camp, but a public network in a local community), Tier 5 licensing should be considered. In short, where there exists clear economic benefits, but less identifiable social benefits, more localized licensing should prevail.

32. Similarly, since we have advocated for "Accelerated Access Licences:"
- If an applicant aims to connect a particularly rural/remote, underserved community and the Department is able to offer some accelerated path to spectrum access, the licence should be made available in more localized areas than Tier 5 licences allow.
- If the potential use case has social, but not economic benefits, localized licensing should also be considered.

33. In summary, the Department should use more localized licensing when only one of either economic or social benefits are present, but where both benefits are demonstrable the larger Tier licence should be considered. The merit of such an approach is that it may encourage potential use cases that address one side of the benefits to consider how both sets of benefits might be realized when the use case is applied on a larger scale.

Q9 ISED is seeking comments on its proposed process for identifying rural and remote Tier 5 service areas in which there is unused spectrum that would be made available for access spectrum licensing.

34. We generally agree with the approach of using the Spectrum Management System for determining areas where spectrum is unused, but encourage ISED to consider making these queries (or completed analyses) accessible for casual users of the system (for example, members of the public on ISED's website). Without additional processing, there is no direct mechanism in the current SMS for filtering entries by licence area or tier. Accessible information of this kind lowers access barriers for municipalities, community groups, Indigenous communities and small businesses who may want to take advantage of Access Licensing offerings.

Q11 ISED is seeking comments on its proposal that stations already deployed by primary or subordinate spectrum licensees within their service areas would be protected from subsequent deployment under access spectrum licences.

35. We are requesting clarification from ISED on the definition of "deployed" as outlined in the proposal to restrict access spectrum deployment in areas containing already deployed primary or subordinate spectrum licensees.[45] Is the requirement merely that equipment be onsite, or must it be actively providing service to the area in question? We suggest the latter criteria is better, to prevent primary or subordinate licensees from "hoarding" service areas by deploying out-of-service equipment.

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[45] The Consultation, para. 46.

Q12 ISED is seeking comments on the above options for eligibility.

36. We seek clarification on the use of the term "operator" in paragraph 48 of the Consultation, and hope ISED considers an operator to be any entity that could deploy and run radio equipment in the applicable band. We recognize that Access Licences should be provided to entities that intend to bring services to rural and remote areas; however, these licences should not be limited to existing telecommunication service providers. Industry based vertical use cases will require providing licences to private firms that are not telecom operators. As indicated above in paragraph 29, we feel that communities, Indigenous governments and public good uses should also be considered. To ensure Access Licences result in deployments we feel eligibility should include "any entity that reasonably evinces intention and potential capacity to deploy service."

Q13 ISED is seeking comments for Option 1 and Option 2, specifically should the deployed and/or undeployed spectrum be based on any frequency band (e.g. 2500 MHz) currently held by the applicant or only the band (e.g. PCS band) for which the application is made?

37. ISED should clarify whether the options presented in this section apply to deployed/undeployed licences in any tier covered by the applicable Tier 5 area, or only to other licences in Tier 5. In our comments, we have assumed Tier 5 licences are the only ones that will be considered.

38. Both Option 1 and Option 2, as ISED have proposed them, would lead to difficulties in the event that licence areas smaller than Tier 5 are introduced. For remote areas that cover large geographical areas (a significant number of the rural- and remote-classified) basing the qualification on the Tier 5 area may serve as a hindrance to applicants seeking to provide service to small industrial sites or population areas within a tier.

39. Of the two proposals, Option 1 seems to provide the most flexibility for applicants while providing an incentive for deployment: under the option, an entity can only obtain a new licence if it has deployed services for its existing licences.

40. To keep consistent with other spectrum licensing frameworks, we suggest that spectrum access licences be applied on a band-by-band basis.

Q14 ISED is seeking comments on its proposal to issue access spectrum licences with a three-year licence term and the proposed wording of the condition of licence above.

41. Our input on the proposed three-year term and condition for licences is dependent upon the choice of Option 1 or Option 2 as outlined in the eligibility section. Under Option 1, a three year term serves as a *de facto* deployment requirement since the licensee would become ineligible for renewal (due to holding an undeployed licence) at the end of the three year period. Under Option 2, the three year term should be paired with a deployment requirement. The Access Licensing framework is underpinned by the objective of immediate, rapid deployment, and both the licence terms and conditions of licence should reflect that objective.

42. Further, and in regard to the issue of rapid deployment, we wish to highlight that in Ofcom's Shared Access Licences framework, the UK regulator specifies that a licence recipient begin transmitting within six months of the licensing being issued, and that one month after the time frame the regulator has the power to revoke the licence.[46]

Q15 ISED is seeking comments on its proposal that access spectrum licences not contain transfer, subdivision or subordination privileges.

43. Given that many Access Spectrum licences will be held by industrial entities, and that those entities will be subject to merger and acquisition activity, ISED should consider cases where a bankruptcy, merger or acquisition necessitate the resolution of licence ownership issues. One possibility is that licences falling under this scenario are immediately released, making them available for re-application by whatever entity emerges from the merger or acquisition activity. Apart from that scenario, we generally agree with the condition as proposed.

Q16 ISED is seeking comments on its proposal to align the deployment conditions for access spectrum licences with the relevant conditions of licence currently applied to the licences in the specific band, taking into account any differing characteristics such as Tier sizes, and the timing as to when those deployment requirements should apply. ISED is also seeking comments on the appropriateness of existing deployment requirements for private networks.

ISED will consider alternative proposals for the deployment requirements for access spectrum licences. Such proposals should contain a rationale and discussion of their implications for ISED's policy objectives.

44. ISED should clarify what is meant by the term "private network" in paragraph 58 of the consultation document. While resource extraction and other industry based uses are noted throughout the consultation, are there any limitations on what kinds of private networks might be proposed? Could a millenarianist religious movement apply for an Access Licence for a private network to prepare for the apocalypse/communicate with divine beings? What about a group of academic researchers aiming to build a private network to test new technologies? Or consider the case of an environmental defence group seeking to create a private network with the aim of inhibiting a logging company's ability to create its own private network in the same area?[47] Though such cases may be unlikely, if the purpose of private networks is limited to industrial/agricultural/purely economic uses, that should be clarified.

45. If a "private network" is taken to be one that is used entirely for industrial purposes, with no telecommunications features provided as a service to third parties (i.e. voice or data services made available to residents who are not directly involved in the license holder's industry), then existing

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[46] Ofcom. 2019. *Enabling Wireless Innovation through Local Licensing.* https://www.ofcom.org.uk/__data/assets/pdf_file/0033/157884/enabling-wireless-innovation-through-local-licensing.pdf. para. 3.177.

[47] Presumably the approach of attempting to 'block' others networks by establishing private networks would not be viable given the multitude of bands available.

deployment requirements are meaningless at any scale. Since the intent of deployment requirements is to ensure telecommunications services are available to Canadians, a geographic coverage requirement is also of little use. Furthermore, if ISED intends to label Access Licenses as "public" or "private," it must be prepared to verify whether or not networks are being deployed in line with the licensee's stated intention. For verified, industrial only applications, a start-of-transmission deadline of six months, following the Ofcom model,[48] may be sufficient.

47. If ISED pursues deployment requirements for Access Licences, they will require careful consideration, particularly if such licences are provided on a Tier 5 basis or on a basis larger than site specific 25 km^2 hex cell allocations. For certain bands there are multiple deployment requirements based on different terms from the policy and licensing frameworks. For example, when 3500 MHz spectrum eventually becomes available for access licensing will seven, 10 or 20 year terms be used as the starting point for deployment requirements? For some service areas the seven year deployment requirements were as low as 5%. Consider 4-126, Watrous, with a 5% deployment requirement after seven years. 4-126 comprises three Tier 5 regions: 5-456 (Outlook, population 8,644); 5-455 (Watrous, population 9,031); 5-454 (Wynyard, population 9,612). Meeting the 5% deployment requirements in any of these Tier 5 requires servicing under 500 people. The translation of deployment requirements from Tier 4 to Tier 5, regardless of whether it is in general or for private networks specifically, will result in numerous cases where there is little requirement to serve rural or remote populations.

48. Separately, and related to deployment requirements generally (across this and other, future consultations), given the importance of deployment requirements as a means for ensuring rural and remote connectivity the Department should undertake or have a third party undertake an analysis of deployment requirements. This study should involve examining several benchmark deployment levels (e.g.: 10, 25, 33, 50, 67, 75, and 90%) in each Competitive Service Area from Tier 1 all the way to Tier 5 and identify how many population centres would be served/unserved based on the 2021 census results. This report could then be made publicly available and inform all future discussions around deployment requirements with updates following each census.

49. Regardless of the approach chosen by ISED, the implications of a private network operating in an area where consumer services are lacking or nonexistent must be considered. By differentiating between public and private uses of a licence, ISED is creating situations where either an industry or a collection of residents within an area can benefit from service deployment, but not both.

Q27 ISED is seeking comments on the process for making access spectrum licences available and the options described above.

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[48] Ofcom. 2019. *Enabling Wireless Innovation through Local Licensing*. https://www.ofcom.org.uk/__data/assets/pdf_file/0033/157884/enabling-wireless-innovation-through-local-licensing.pdf. para. 3.177.

50. We strongly suggest that ISED incentivize the development of services in low-population areas by eliminating the minimum license fee of $1000 as outlined in DGRB-005-03.[49]

51. To provide the most flexibility for applicants, we support making Access Licences available under Option 1. Prioritizing the release of blocks and areas, as outlined in Option 2, presents ISED the difficult challenge of balancing factors whose weight and importance will vary regionally across Canada.

D1 ISED hereby rescinds RP-019, Policy for the Provision of Cellular Services by New Parties, effective August 16, 2021.

52. We recognize that ISED has not asked for comment on the rescinding of RP-019; however, we respectfully submit that a public consultation should be just that - a consultation. If the Department feels that RP-019 is "redundant"[50] we see no reason why it cannot consult on its rescindment rather than declare it.

53. Furthermore, and more importantly, the basis for rescinding RP-019 is the proposals in the Consultation. However, these proposals are simply that - proposals. By rescinding RP-019 on the basis that the Department's proposals make it redundant, it would seem to suggest that the Department feels the Consultation's outcome is already determined (that Access Licensing as proposed will be accepted).[51] The rescinding of RP-019 also represents a lack of fulfilment of decision B4-1 from the 700 MHz Policy and Technical Framework.[52]

Q49 ISED is seeking comments on its proposal to no longer renew existing RRBS licences after March 31, 2027.

53. With regard to Rural Remote Broadband Systems, we wish to note the following conclusion about the program from Dr. Taylor:

> The RRBS example offers a clear case study of a bold policy initiative to bring service to difficult regions and introduce new, smaller players into concentrated wireless markets. It was largely the product of forward- thinking policy-makers… What is not so apparent is whether the current problems faced by RRBS are due to the inherent limitations of the policy itself or a result of the Canadian government choosing to allow RRBS providers to wither on the vine…[53]

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[49] Industry Canada. 2010. "Radio Authorization Fees for Wireless Telecommunication Systems that Operate in the Radio Frequency Bands 824.040 MHz to 848.970 MHz , 869.040 MHz to 893.970 MHz or 1850 MHz to 1990 MHz." DGRB-005-03, s. 2(2).

[50] The Consultation, para. 97.

[51] For reference, the limited analysis of Industry Canada consultations would seem to suggest that this is the case (Michael B. McNally, Brandy Mowatt and Lilian Pintos. 2014. "Canadian Participation in the SPectrum Management Consultation Process: Involvement, Indifference or Exclusion?" *Journal of Information Policy, 4*: 296-326. https://doi.org/10.5325/jinfopoli.4.2014.0296).

[52] Industry Canada. 2012. *Policy and Technical Framework: Mobile Broadband Services (MBS) - 700 MHz Band; Broadband Radio Service (BRS) - 2500 MHz Band.* SMSE-002-12. https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/700MHz-e.pdf/$file/700MHz-e.pdf p. 21.

[53] Gregory Taylor. 2020. "Bridging the Urban-Rural Digital Divide: The Case of Remote, Rural Broadband Systems in Canada." p. 162-186. In *Frequencies: International Spectrum Policy*. G. Taylor and C. Middleton (Eds). McGill-Queens University Press. p. 179-180. (herein "Bridging").

The proposal to no longer renew RRBS licences will complete the herbicide of this once bold policy.

54. Given the end of RP-019 and potential end of RRBS, we recommend that ISED undertake or have a third party to undertake final assessments of both the RRBS and RP-019 policies. ISED should be commended for being willing to undertake new options to increase rural and remote spectrum access (e.g. RP-019, RRBS, Access Licensing) and not remaining beholden to policies with identifiable problems.[54] Lack of comprehensive, final analyses of broadband programs is a notable shortcoming in the Canadian context and should be addressed.[55]

55. Finally, the breadth of changes proposed and the evolution of the Canadian telecommunications and particularly wireless sector over the past 15 years necessitates a return to the SPFC. We implore ISED to conduct a consultation with the aim of revisiting the enabling guidelines in particular. In Canada's wireless sector alone the past decade and a half has seen the creation and then subsequent absorption of the multiple providers (the AWS new entrants), partial opening of foreign investment restrictions, multiple new generations of wireless technology come to fruition (and licences come to auction), the creep of licence terms to a score of years, among other changes. As we wrote earlier this year:

> Modern policy for modern technology is not too much to ask for. Canada's wireless spectrum is an intangible resource that belongs to all Canadians. It's time to reform Canada's approach to spectrum management to ensure equitable, affordable, high-speed internet access for everyone.[56]

Conclusion

56. We again thank the Department for the opportunity to partake in the Consultation. We wish to highlight three recommendations that fall outside of the specific questions for further consideration by ISED:

- **ISED should undertake a separate consultation on the *Spectrum Policy Framework for Canada* (*SPFC*) in 2022** (ES3 and para 55)

- **the Department should undertake or have a third party undertake an analysis of deployment requirements. This study should involve examining several benchmark deployment levels (e.g.: 10, 25, 33, 50, 67, 75, and 90%) in each Competitive Service Area from Tier 1 all the way to Tier 5 and identify how many population centres would be served/unserved based on the 2021 census results** (para 48)

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[54] Taylor. 2020 "Bridging"; McNally and Trosow. 2013. "The New Telecommunications Sector."

[55] McNally et al. 2017 "Thematic Analysis." p. 79.

[56] Michael B. McNally, and Kris Joseph. 2021. "Our Wireless Spectrum Belongs to All Canadians. It's Time to Reform Our Approach to Ensure Equitable, Affordable High-Speed Access for All." *The Toronto Star.* 8 Aug. 2021. https://www.thestar.com/business/opinion/2021/08/08/our-wireless-spectrum-belongs-to-all-canadians-its-time-to-reform-our-approach-to-ensure-equitable-affordable-high-speed-access-for-all.html

- **that ISED undertake or have a third party to undertake final assessments of both the RRBS and RP-019 policies** (para 54)