



***Design of the New CRTC Broadband Fund:***

***A Focus on Technology and Competitive Neutrality,  
Backbone Transport and Open Gateway Access***

***Intervention by SSI Micro Ltd.***

**In Response to Telecom Notice of Consultation CRTC 2017-112  
*Development of the Commission's Broadband Funding Regime***

**June 28, 2017**

## A. Summary

1. In accordance with the procedure established in Telecom Notice of Consultation CRTC 2017-112, “Development of the Commission’s Broadband Funding Regime” (“TNC 2017-112”), SSi Micro Ltd. (“SSi”) is pleased to submit this Intervention, entitled “*Design of the New CRTC Broadband Fund: A Focus on Technology and Competitive Neutrality, Backbone Transport and Open Gateway Access*”.
2. A pioneer in remote-area broadband, SSi designs, builds and operates innovative communications networks to support communities with limited or no terrestrial access to the outside world. We are delighted that the Commission has determined, in Telecom Regulatory Policy 2016-496, that people everywhere in Canada must have access to high-speed, reliable broadband Internet services. SSi is committed to continuing to play our part in this effort.
3. In TNC 2017-112, the Commission is seeking input as it designs the broadband funding regime through which all parts of the Canadian telecommunications industry will contribute to achieving the Universal Service Objective (“USO”). The Commission has identified three guiding principles for the new regime. First, its goal will be to focus on underserved areas of Canada. In achieving this goal, the Commission will seek to ensure that the fund complies with the second guiding principle of alignment with the broader ecosystem of current and future funding and investments, and the third guiding principle of being managed and administered in a transparent, fair and efficient manner.
4. As the Commission makes specific decisions about how to ensure that this broadband funding regime meets its goals in accordance with these general guiding principles, SSi urges the CRTC to consider three further operating principles. These operating principles should govern the new fund’s governance, operating and accountability frameworks, as well as eligibility and assessment criteria for proposed projects:
  - **Operating Principle #1: Competitive and Technology Neutrality:** The new broadband funding mechanism will best align with the broader ecosystem of both private sector investment and public sector funding by guaranteeing both competitive neutrality and technological neutrality. Only a neutral approach can maintain focus on Canada’s underserved areas. Moreover, only a fund designed with both technological and competitive neutrality in mind can meet the Commission’s standards for transparency, openness and fairness of management and administration.
  - **Operating Principle #2: Focus Funding on the Backbone:** New funding will contribute best to reaching Canada’s underserved areas by prioritizing the creation of transport (backbone) facilities to reach remote areas, not by subsidizing access or last mile facilities. This priority will also align best with the Canadian telecom ecosystem by: leveraging the significant but still limited funding to be available under the new regime; complementing other initiatives, including the Government of Canada’s Innovation Agenda; and recognizing developments and the significant investments already made by telecommunications service providers and governments in last mile networks.

- **Operating Principle #3: Open Access to the Backbone is Essential:** All local service providers must be allowed open and affordable access to backbone connectivity, which in turn will allow for effective competition in the local services market – spurring on greater investment, innovation and choice for fixed and mobile broadband and voice services. This approach aligns best with the structure of Canada’s telecom industry and the range of technological options available to it – but, even more important, it is the best way to align with the creativity that Canadian users demand and Canadian innovators can supply.
- 5. In this intervention, SSI applies these three operating principles to the questions the Commission lists in Appendix 2 to TNC 2017-112, commenting as appropriate to the Commission’s preliminary views as expressed in Appendix 1 and in the body of the Telecom Notice of Consultation itself.

### ***B. Background: SSI’s Interest in this Proceeding***

- 6. When it issued Telecom Regulatory Policy 2016-496, “Modern telecommunications services – The path forward for Canada’s digital economy,” in December 2016 (“TRP 2016-496”), the Commission did nothing less than revolutionize both the goal of universal telecommunications service in this country, and the process by which the telecommunications industry would contribute to meeting that goal.
- 7. The Commission recognized that everyone in Canada, wherever they live and whatever their material and social circumstances, must have access to broadband connectivity not only to participate fully in the digital economy, but also, and more fundamentally, to take part in Canada’s economic, social, democratic and cultural fabric (TRP 2016-496, paragraph 19). In consequence, telecommunications regulation needs to re-focus on connectivity and capacity issues, rather than on the issues relating primarily to voice communications (paragraph 17).
- 8. To this end, the Commission announced a major change to its Basic Service Objective (“BSO”) policy. Broadband Internet access service is now considered a basic telecommunications service for Canadians. The Commission established a new Universal Service Objective with broadband at its core. The new USO calls for all Canadians, including those in remote areas, to have access to high quality voice and broadband services on both fixed and mobile wireless networks.
- 9. As a company that has enthusiastically embraced the challenge of extending telecom access to some of the most remote communities in the country, SSI can only endorse the Commission’s findings about the importance of broadband to people all across Canada and its determination to ensure that the regulatory framework, including the industry’s contribution to achieving universal service, fully supports improved connectivity and capacity everywhere.
- 10. Founded in 1990, SSI is a pioneer in remote-area broadband, launching service into markets where Internet often did not exist. From our headquarters in Yellowknife and Satellite Teleport and Network Operations Centre in Ottawa, SSI designs, builds and operates innovative communications networks to support communities with limited or no terrestrial access to the outside world.

11. SSi has carried out projects across the Arctic and around the world, delivering telecoms services to consumers, governments and business. In Nunavut, we operate advanced satellite, gateway and local broadband wireless facilities throughout the Territory under the QINIQ brand, and we are the only provider to offer an equal level of broadband service in all 25 communities.
12. SSi has also gained a great deal of experience in working with broadband funding programs across various levels of government. Since 2005, SSi has received investments from the Federal Government through the following broadband development programs: Broadband for Rural and Northern Development (“BRAND”); the National Satellite Initiative, Parts 1 and 2; Broadband Canada; and the Connecting Canadians Program. We have also applied under the Federal Government’s most recent Connect to Innovate Program, which is still under consideration. Through these programs, SSi and the Federal Government have co-invested some \$150 million into Nunavut communications infrastructure since 2005.
13. Beyond these programs, in the last eighteen months SSi has made extensive investments with our own funds into last mile infrastructure in Nunavut in order to upgrade all 25 communities in Nunavut with 4G-LTE and 2G-GSM last-mile technologies to offer fixed and mobile voice and broadband services.
14. Given our operating territory, extensive experience with the Government of Canada and broadband development programs, significant communications infrastructure investments, and long-standing, involvement in the Commission’s proceedings to bring competition to Canada’s North and to upgrade the standard for basic telecommunications services across Canada, SSi has a very direct interest in the reform of the BSO, the achievement of the new USO, and, therefore, in the proceeding initiated by TNC 2017-112.
15. We also bring to this proceeding insights, based on our unique experience in bringing broadband Internet access to remote communities in the North, which we believe will assist the Commission in designing a new broadband funding mechanism that advances the Commission’s objectives. And we are committed to contributing directly to closing the availability gap in Canada’s northernmost remote communities.

**C. From Guiding Principles to Principled Design**

16. The Commission has adopted three “guiding principles” for its design of the new broadband funding mechanism:
  - *the funding mechanism will focus on underserved areas in Canada;*
  - *the Commission will attempt to align its funding mechanism with the broader ecosystem of current and future funding and investments; and*

- *to the greatest extent possible, the funding mechanism will be managed at arm's length, based on objective criteria, and will be administered in a manner that is transparent, fair, and efficient.*<sup>1</sup>

17. In identifying these guiding principles, the Commission is identifying both ends – especially the focus on underserved areas in Canada – and means. The means it identifies are crucial. With this statement of principle, the Commission is rightly highlighting that as a regulator, its role is to align with the investment decisions of those who are engaged in building Canada's telecom industry, including, where appropriate, those who decide that to reach publicly-defined goals demands additional public funding. With the third guiding principle, the Commission is signaling that the new fund must be fair in both design and operation, and that its administration cannot be so costly that it undermines its primary objective, namely, to help deliver the newly defined USO to underserved areas of Canada.

18. The goal that the Commission identifies is even more important. It puts underserved areas at the centre of what this fund must achieve.

19. One crucial implication of this guiding principle is that it suggests funding should concentrate where Canadians are least well served with broadband Internet access infrastructure. In SSI's submission, those locations are in remote communities. We note the definition that Innovation, Science and Economic Development Canada ("ISED") offers of an eligible "remote community" in the recent Connect to Innovate Program Agenda:

*An eligible **rural** community is defined as a named place with a population of less than 30,000 residents and that is 2 km or more from the nearest 1 Gbps PoP. An eligible **remote** community is a community that meets the definition of an eligible rural community and does not have year-round road access and/or is included on the [CRTC's] list of communities dependent on satellite for telecommunications services.*<sup>2</sup>

ISED's definition is cumulative and makes it clear that the remote community is not only small and lacking in broadband Internet connectivity: it also lacks the fundamental means of physical connection with the rest of Canada, that being year-round road access.

20. SSI considers all three of the Commission's guiding principles for the new funding mechanism to be sound, appropriate, and consistent with how the Commission has worked with privately- and publicly-owned telecom service providers throughout its history.

21. However, as the Commission well knows, the ways in which detailed questions about governance, eligibility, and assessment are resolved in the design of a funding mechanism can either be the making of the new fund as a way to deliver service to underserved areas of the country, or it can undermine the new fund, relegating it to irrelevance or, worse, to an intervention that, for all its

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<sup>1</sup> TRP 2016-496, paragraph 137 and TNC 2017-112, paragraph 4.

<sup>2</sup> Innovation, Science and Economic Development Canada, "Connect to Innovate – Application Guide," December 2016, at <https://www.canada.ca/en/innovation-science-economic-development/programs/computer-internet-access/connect-to-innovate/apply/applicationguide.html#s3.3.1.1>. (the "CTI Guide").

good intentions, actually forecloses innovative solutions to the gaps that divide Canadians' participation in the digital economy.

22. In determining the many detailed design decisions that face the Commission in the current proceeding, SSI therefore submits that the Commission should apply three further operating principles – principles derived from an assessment both of the ends, that is the needs of the most acutely “underserved” areas in Canada, and of the means available to the Commission to achieve them in the “broader ecosystem of current and future funding and investments.” More specifically, SSI urges that the Commission apply three questions when making these decisions:
- **First**, does the proposed measure advance **competitive and technological neutrality**, or could it undermine this central principle of twenty years' standing in the Commission's approach to regulating the Canadian telecoms industry?
  - **Second**, will the proposed measure contribute to **funding backbone (transport) facilities** for the use of Canadians in underserved remote and rural areas? And
  - **Third**, will the proposed measure require applications to offer **truly open gateways to transport facilities** that can be enforced by market conditions or by the oversight of the Commission, as necessary?
23. If the answer to any of these questions is yes, the Commission should weigh the proposed measure more heavily in making detailed determinations about governance, eligibility and assessment.
24. If the answer is no, however, the Commission should reject or give the factor limited weight. In other words, the Commission should critically examine any proposal that does not align with the three principles underlying these questions, and should consider whether it is necessary to lend the support of the new funding mechanism to it.
25. SSI discussed these three principles at some length in its June 15, 2017, intervention in the proceeding initiated by Telecom Notice of Consultation CRTC 2017-92.<sup>3</sup> We believe they are not only useful, but essential, in deciding how to phase out the existing local service subsidy in such a way that the new broadband funding mechanism can achieve, not undermine, the goal of improving service to the most underserved areas of Canada. However, they apply with even greater force to the determinations the Commission must make in the current proceeding.

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<sup>3</sup> “Telecom Notice of Consultation CRTC 2017-92, Phase-out of the Local Service Subsidy Regime (“TNC 2017-92”): Intervention of SSI Micro Ltd.”, June 15, 2017, paragraphs 15 to 39.

#### D. **Operating Principles to Close the “Availability Gap”**

26. The first operating principle that SSI proposes should be uncontroversial. It is:

***Principle #1: Competitive and Technology Neutrality.*** *For a new regulatory framework to truly assist development of a quality communications system and better broadband Internet access service, it must be neutral with respect to both competition and technology.*

27. The principle of competitive and technological neutrality aligns with the policy determinations that the Commission has made since the *Telecommunications Act* came into force over twenty years ago. In addition, Commission staff has stated explicitly that it applies in the current context. In testimony before Parliament’s Standing Committee on Industry, Science and Technology on May 30, 2017, Chris Seidl, Executive Director – Telecommunications at the Commission, stated:

*The new broadband fund will be technology neutral. This means that Internet service providers will be able to submit proposals featuring the technology they think will best meet the needs of the community. Our objective is to make sure that rural residents have comparable service to that available in urban centres and that the solutions will support the evolving requirements.*

28. Decisions made consistent with this operating principle will align best with what the Commission in TRP 2016-496 and TNC 2017-112 referred to as the “broader ecosystem” of both private sector investment and public sector funding. That ecosystem includes the priorities that the *Telecommunications Act* suggests and that the Government of Canada’s 2006 Policy Direction to the Commission reinforces.<sup>4</sup> The operating principle demands that the Commission and the bodies it creates to manage, administer and evaluate the fund not discriminate among competing proposals by explicitly or implicitly pre-judging which proponents should be favoured in particular markets – or which technologies seem, from the outside, to make more sense for certain remote or rural communities.

29. A fund that strictly respects technological and competitive neutrality will also best benefit the most underserved areas of Canada. In fact, it is Canada’s remote communities that most need the creativity that competitive and technological innovation can stimulate. Decisions made in the abstract about which competitors or which technologies are eligible for funding, and the assessment of competing proposals, do have the potential to stifle that creativity. Decisions that focus on the challenges of the communities to be served, and compare proposals on the basis of the characteristics and expressed priorities of those communities rather than on the basis of *a priori* decisions about which companies or technologies seem most capable, are more likely to comply with this operating principle.

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<sup>4</sup> SOR 2006-355, “Order Issuing a Direction to the CRTC on Implementing the Canadian Telecommunications Policy Objectives,” P.C. 2006-1534, 14 December 2006.

30. Moreover, only a fund designed with both technological and competitive neutrality in mind can meet the Commission's standards for transparency, openness and fairness of management and administration.
31. Although this operating principle should not be controversial, SSI is concerned that present assessments of the capabilities of technologies, especially wireless technologies that include mobile wireless, are colouring some of the design decisions that the Commission might make. This has the strong potential to undermine technological neutrality.
32. We are also concerned that the Commission might structure rules that result in loss of competitive neutrality in its concern to account for the role that various levels of government and government entities could play in the projects that could be funded through the new mechanism. The significance of government involvement is not the dollar amount that government can contribute to a project, welcome though that often is. The more important role that all governments, including indigenous governments, can play is that by indicating their support for a project, they can reflect a transparent, honest and inclusive assessment of popular needs and wishes.
33. However, the Commission must be careful that government input does not constrain innovation by over-weighting proposals that align with the relevant government's bureaucratic interests and perspectives at the expense of encouraging market forces to meet the demands of end-users.
34. The new funding mechanism replaces the old regime by which all of Canada's telecommunications service providers contributed to ensuring that the Incumbent Local Exchange Carriers (ILECs) could continue to provide basic voice telephone service. The Commission has determined that the funds raised from Canada's private sector-dominated telecom industry need to be redirected in line with the new USO the CRTC defined in TRP 2016-496. The role the Commission is playing is one of redirecting telecom revenue to correct for the unregulated market's inability or unwillingness to deliver this USO everywhere in the country.
35. Consistent with the nature of the new funding mechanism, it is important to ensure that neither the fund nor government participation in funded projects displaces the private sector's role in serving remote and rural communities. To do otherwise will distort the competitive market and dampen innovation and customer choice.
36. The Commission should, therefore, design the new funding mechanism so that it advances technological and competitive neutrality. SSI submits that if the Commission cannot satisfy itself that any measure proposed is conducive to neutrality in these two key tenets of the Canadian telecommunications system, it should reject the measure or, if that is not entirely possible, it should minimize the geographic and market impact of the measure.



37. The second operating principle that SSI urges the Commission to adopt is:

***Principle #2: Focus Funding on the Backbone.*** *To best leverage the significant but still limited funding that will be available under the new regime, to complement other initiatives, including the Government of Canada’s Innovation Agenda, and in recognition of developments and the significant investments already made in last mile networks, the funding priority for any new regime should be on transport (backbone) facilities to reach underserved areas, not subsidizing access or last mile facilities.*

38. This operating principle is driven by the Commission’s first guiding principle, to focus the new funding mechanism on Canada’s most underserved areas. Backbone, or transport, facilities are what remote communities need most, especially in Canada’s North and mid-North regions.

39. In the proceeding that led to TRP 2016-496, many interveners identified a number of gaps that prevent all Canadians from benefiting from access to telecommunications services that meet the newly defined USO. These included gaps in the availability of high-quality broadband Internet access services, which the Commission determined that it could address through regulatory means including the new broadband funding mechanism, and other important gaps, such as affordability, accessibility for persons with disabilities, and digital literacy skill levels, which it determined that others were better placed to address.

40. While the Commission’s determination in TRP 2016-496 aligns with its mandate, its historical role, and the nature and structure of the telecommunications industry that it regulates, SSI notes that in practice, separating efforts to improve availability from considerations of affordability, accessibility and digital literacy may prove difficult. However, it may also prove unnecessary.

41. All these gaps prevent Canada’s remote communities – especially indigenous communities – from participating in the digital economy. Assigning top funding priority to closing the availability gap for these communities will help; so will challenging community members, their representatives, and the private-sector investors and operators that want to serve them to find creative ways to improve digital literacy and accessibility while maintaining affordability.

42. In TRP 2016-496, the Commission recognized that to close the availability gap to remote communities, the Canadian telecommunications industry must focus on the backbone. It noted:

*Parties including some provincial and territorial governments submitted that the Commission should be involved in funding transport infrastructure in underserved areas. They argued that this would be a means of increasing the number of service providers to these areas.<sup>5</sup>*

SSi advocated for this focus in the proceeding that gave rise to TRP 2016-496.

43. SSI’s own experience amply demonstrates that, even in Canada’s Far North, competitive telecommunications service providers are eager to provide innovative fixed and mobile Internet access services, including high-capacity or broadband services, that respond to the needs,

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<sup>5</sup> TNC 2016-496, paragraph 118.

economic circumstances, and the expressed wishes of Canadians who live, work and build communities in remote areas.

44. As we noted above, SSI has made significant investments in both fixed and mobile wireless technologies to offer broadband Internet and voice services in Nunavut. 4G LTE systems – including the system that SSI has deployed in Nunavut – are technically capable of delivering the 50 Mbps download/10 Mbps upload speeds the Commission has established in the USO as the threshold for broadband Internet access service.
45. The challenge for SSI – and for SSI’s existing and potential customers in the North, as well as customers of other providers of last-mile Internet access services – is that the speed, capacity and resiliency of the services we provide and consume are limited by the facilities with which we can interconnect to link Northern residents, businesses and governments to the global Internet.
46. The Commission can and should address this fundamental problem with the design of the new broadband funding mechanism. Both eligibility and assessment criteria should be weighted so as to favour proposals to add robust and openly accessible backbone capacity.
47. However, it is not enough simply to add backbone capacity, especially if it undermines competitive or technological neutrality. Transport facilities must be available to all providers of access or last-mile services. And this availability must be more than simply notional. This leads to SSI’s third proposed operational principle:

***Principle #3: Require Open Access to the Backbone:** All local service providers must be allowed open and affordable access to backbone connectivity, which in turn will allow for effective competition in the local services market. Only open access will spur on greater investment, innovation and choice for fixed and mobile broadband and voice services.*

48. As the Commission recognized in Telecom Regulatory Policy 2009-657, “[t]he Internet has pushed innovation from the core of networks to the edges”. As it addresses the availability gap for Canadians in remote areas, the Commission cannot afford to foreclose the innovation and experimentation that these Canadians themselves can generate at the “edges” of Canada’s networks. Nor can it afford to foreclose the efforts of telecommunications companies that are willing to invest in and develop new technologies and new business models in an effort to meet the needs of people who live in remote parts of the country.
49. To spur innovation and choice at the edges of the Internet, the Commission must take advantage of competition and of a diversity of technologies. However, remote communities will not benefit from choice or innovation, let alone proposals that help their residents to address the affordability, accessibility and digital literacy challenges they often face along with the availability gap, unless access providers have a right to connect to available backbone facilities on fair and reasonable terms. This of course applies with particular force to any backbone facilities that are funded with government support and the Commission’s approval.

50. SSI urges the Commission restrict eligibility for funding to applicants that will offer truly open gateways to transport facilities that will be reliably enforced, either by the operations of a competitive market (in the event that competitive backbone facilities are available) or by the oversight of the Commission itself as necessary.<sup>6</sup>

***E. Applying the Operating Principles to Design the Funding Mechanism***

51. In the discussion that follows, we comment on how the Commission's guiding principles and SSI's three proposed operating principles apply to frame answers to the questions that the Commission poses in Appendix 2 to TNC 2017-112.

**Governance, operating, and accountability frameworks**

***Roles of the Commission and the third-party administrator(s)***

*Q1. Should additional roles and responsibilities be considered for each entity?*

*And*

*Q2. Is there a need to amend or eliminate certain roles or responsibilities?*

52. The Commission lists proposed roles and responsibilities for the Commission and the third-party administrators associated with each of the project management and accounting functions in Appendix 1 (pages iii-v). It also notes, at paragraph 11 of TNC 2017-112, some of the precedents the Commission is considering with respect to the governance, operating and accountability frameworks it would apply to the new broadband funding mechanism.

53. SSI notes that the precedents listed all operate in the broadcasting sector, not the telecommunications sector. Without specific experience of how well they work to achieve the Commission's guiding principles concerning transparency, fairness and efficiency, it is difficult to comment.

54. Recent precedents with which telecom providers with experience of serving Canada's remote and rural communities are more familiar is the administration of ISED's Connecting Canadians and Connect to innovate broadband funding programs. Consistent with the Commission's guiding principle of alignment with the ecosystem, we urge the Commission to consider these precedents as it finalizes the roles and responsibilities of the entities involved in administering the new fund, as well as its own roles and responsibilities for ensuring that the fund operates transparently, fairly and efficiently to achieve its objectives.

55. The preliminary list that the Commission included in Appendix 1 to TNC 2017-112 seems comprehensive and appropriate.

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<sup>6</sup> This is also one of the core components SSI's Qimirluk Proposal, presented to the Commission as part of the proceeding that led to the issuance of TRP 2016-496.

56. However, we note that it may be quite some time – up to two years – before this new funding mechanism is fully operational. We therefore **recommend** that the Commission revisit the question of roles and responsibilities in a public proceeding shortly before the new mechanism begins to operate. This will allow the Commission to verify whether certain roles and responsibilities need to be altered given the inevitably changed conditions at the point when the mechanism actually comes into operation.

### ***Governance Structure of the Third-Party Administrator(s)***

*Q3. Should there be a single administrator/board or separate administrators/boards for each of the fund's two functions (project management and accounting)?*

57. To ensure transparency and fairness, in accordance with the Commission's third guiding principle, SSI believes that the Commission should establish separate boards for each of the two functions.
58. While the goal should be to streamline the process, and minimise unnecessary structure, we can certainly see the benefit of having separate administrators for the project management and accounting functions.
59. For example, as mentioned by the Commission in Appendix 1, with respect to the project management function, the third-party administrator and board of directors need have full independence from any recipients of the broadband fund (such as Internet service providers - ISPs).
60. In contrast, for the accounting function, the board of directors governing the administrator could include fund recipients, such as ISPs, given that the administrator will make no recommendations or decisions with respect to funding.

*Q4. Describe the composition of the board(s). For example, would the Canadian Telecommunications Contribution Consortium Inc. (CTCC) be an appropriate choice for the accounting function? How should board members be selected?*

*And*

*Q5. Should any other considerations be taken into account?*

61. The Commission notes, at TNC 2017-112 paragraph 12, that board members should be selected in consideration of their expertise and knowledge, both so as to be able to fulfill their mandates and to reduce the risk of conflict of interest.
62. CTCC could be an appropriate choice for the accounting function, but does not believe the expertise of its members is sufficient to enable the project management function to be fulfilled in a way that satisfies the needs of the people in Canada's most underserved areas, consistent with the Commission's first guiding principle and SSI's second and third operating principles.

63. The board charged with project management will need expertise concerning the specific needs of Canada's remote communities, especially those in the North. How a community with no year-round road access, for instance, uses and values Internet access as an essential way to connect with the rest of the country and the world could differ significantly from the desires of people who can drive to major population centres to access services such as health care, education, and libraries, but who choose to live beyond the reach of high-speed Internet access networks.
64. The project management board will need the technical expertise that members of CTCC can bring, but again, that expertise may need to be extended by including a member with working knowledge of building and operating advanced telecommunications networks in remote community environments.
65. So long as it ensures that the project management board and the accounting board include at all times members with the necessary expertise, SSI believes that the Commission can manage the appointment process, reviewing applications, selecting members, and appointing members to two- or three-year renewable terms of office.
66. The Commission does not propose a way to remove non-performing members from office, nor whether and how board members should be compensated. We note in this regard that the Canada Media Fund – referenced by the Commission at paragraph 11 of TNC 2017-112 - provides several useful precedents. Its directors are compensated and the level of compensation is reported in the corporation's Annual Report. Moreover, they are, according to the 2015-16 Annual Report, "independent from management, its funders, and any beneficiaries of the CMF program." We also note that CMF has a fully developed Statement of Corporate Governance Principles, a Board Charter, and a Code of Business Conduct. These documents might provide some useful guidance concerning additional considerations.

### ***Accountability and fairness***

*Q6. How should the fairness monitor be selected and what metrics should be used to assess whether they have fulfilled their responsibilities?*

67. In TNC 2017-112 paragraph 14, the Commission introduces the idea of a fairness monitor as well as an audit committee. Both should be designed so as to adhere to the third guiding principle concerning transparency, fairness and efficiency.
68. The federal government has years of experience in the use of fairness monitors. For example, Public Services and Procurement Canada ("PSPC") has a Fairness Monitoring Program to provide independent assurance that its activities are conducted in a fair and transparent way. See: <http://www.tpsgc-pwgsc.gc.ca/se-fm/index-eng.html>
69. In terms of selecting a fairness monitor, we believe the Commission should use the MERX website to both advertise and tender for the position.
70. With respect to metrics and monitoring, SSI believes there is need for a clear statement of work for the fairness monitor, a written record of the fairness issues and decisions, and a clear and

simple process to bring concerns or complaints both to and about the monitor. Again, the Commission can follow the approach and experience of PSPC so that applicants and the Commission do not have to learn a second, new process for work within the federal sector.

71. Finally, we do believe that the Commission should submit for public comment the proposed statement of work and review metrics prior to the monitor being selected.

*Q7. Should any additional safeguards be put in place to ensure that the broadband fund is operated fairly and efficiently?*

72. If the broadband fund is structured to comply fully with the Commission's guiding principles and SSI's operating principles, as outlined above, then it should operate fairly and efficiently.

73. That said, to achieve transparency and to permit participants to contribute knowledgeably to the effort to ensure that the fund *continues* to operate fairly and efficiently over time, SSI **recommends** that the Commission publish an annual review of the fund. The review should identify fund recipients and allocations (such as between remote and rural communities, wired and wireless technologies, and fund recipients themselves) to demonstrate that funding decisions are fair and no single category of recipients (such as ILECs) is receiving a disproportionate share of the funding. If the report discloses imbalances like this, the Commission should take corrective measures. See also our response to Q13 (reporting).

### ***Calls for applications***

*Q8. Taking into consideration the administrative burden on all stakeholders, how frequently should calls for applications be issued?*

74. At paragraph 16 of TNC 2017-112, the Commission notes that it will review the broadband fund in the third year of operation "to ensure that the fund is managed efficiently and achieving its intended purpose." At paragraphs 17 and 18, the Commission raises the question of how often the fund administrator(s) should call for applications.

75. Answering these questions requires the Commission to balance the guiding principle of efficiency against considerations raised by SSI's first operating principle, that of competitive and technological neutrality. While the Commission rightly notes the potential administrative burden of frequent calls upon all stakeholders, SSI notes that locking all or most of the available funding in too early could unfairly advantage certain competitors, exclude developing technologies, or even unwittingly lead to approval of less than meritorious applications in a desire to distribute funding. This departure from neutrality could seriously undermine the fund's ability to achieve its objectives efficiently.

76. SSI believes that annual calls would be too onerous for both backbone transport and last-mile applications. We share the Commission's preliminary view (paragraph 18) that the initial call for applications should span multiple years of funding. The fund should consider large, multi-year

projects while respecting the funding cap in any given year. For the first five years, we believe calls should be issued no more often than every three years.

77. However, the Commission should recognize that the investments needed to bridge the digital divide in this country are extensive, and that the new broadband fund should be expected continue into the future – well past five years.
78. This is an important recognition. Backbone networks serving remote communities will need to attract private investment, regardless of the technology selected. Having a long-term CRTC broadband fund will aid in attracting longer-term private investment into both backbone and last-mile projects, irrespective of the technology being deployed. Investors will want assurances the fund will continue for a foreseeable future.
79. The needs of remote communities are so pressing that SSI **recommends** that if any portion of the fund is undersubscribed following a call for applications, the 10% “cap” currently allocated for satellite-served communities (referred to at TNC 2017-112, paragraph 47) should be lifted because of the great need for more bandwidth in all communities currently reliant on satellite in Canada. Original applicants to the satellite portion should be able to access the larger pool of funds.
80. As a corollary to this, satellite-served communities must be able to access the general fund (that is, beyond the 10% cap) for non-satellite backbone solutions. People living in satellite communities should not be limited to only accessing a capped fund amount should the opportunity arise to invest in fibre or other technologies that can deliver effective backbone solutions.

### ***Distribution of funding***

*Q9. How should the distribution of funding be designed (i.e. quarterly, annually, or by project progress payments)?*

81. At paragraph 19 of TNC 2017-112, the Commission notes how the broadband fund will differ from the current local subsidy regime and suggests this will have some implications for the frequency with which funding is distributed. SSI agrees that there are significant differences, and **recommends** that the Commission look to our second and third operating principles for guidance. If funding is focused on building backbone (transport) facilities (Principle #2) that operate as open gateways (Principle #3), recipients will need funds to be distributed quite differently from the steady monthly distribution of the current local subsidy for basic voice services.
82. The greater the size of the payment, and the earlier it can be made (notably including up front payments), the more it will assist recipients in negotiating better pricing from suppliers. Accordingly, we believe this benefit needs to be kept in mind when looking at payments and the most effective and efficient ways to deploy the limited funding available.

83. Moreover, having payments made any more often than annually can lead to additional administrative burden and operating costs for both the recipient and the fund administrators. That should be avoided.
84. The Commission also suggests at paragraph 19 that “a pool of pre-approved applications may be established as a result of the call for applications, some of which could receive financial support in future years as more funds become available.”
85. While this suggestion is attractive from the perspective of reducing the administrative burden on those evaluating funding applications, we **recommend** that the Commission not pursue it. Pre-approval can greatly undermine transparency. It can also commit the fund to a technology (or a firm) that proves to be less than optimal at the moment the funds are actually ready to be disbursed.

### ***Enforcement of funding agreements***

*Q10. Should the Commission impose a condition under section 24 of the Act on recipients to ensure that they complete their proposed project as set out in their funding agreement with the third-party administrator?*

86. The Commission discusses this proposal at paragraph 22 of TNC 2017-112. The CRTC’s guiding principle concerning efficiency, as well as alignment with the broader ecosystem of the Canadian telecommunications environment, suggests it is appropriate to make use of the Commission’s powers to enforce compliance with funding proposals is appropriate, and with the requirements that any offer of telecommunications services by the recipient be subject to conditions the Commission establishes. It will remove a degree of doubt as to whether such proposals can be enforced and if so, by whom. It will also align with the expectations of telecommunications service providers concerning the use of the Commission’s enforcement powers.

*Q11. Should the Commission take any other measures to ensure the accountability of fund recipients?*

87. Consistent with its third guiding principle that values transparency, and with SSI’s first operating principle of technological and competitive neutrality, SSI believes that the Commission should consider *to whom* it is appropriate that fund recipients be accountable. Fund recipients need to be transparent, not only with the fund and the Commission, but with the government agencies that back them and, even more importantly, with the people those agencies represent.
88. Accordingly, SSI **recommends** that fund recipients for both backbone and last-mile investments can publish information online. Published data should include at a minimum:
- The names of communities to be served;
  - The expected time frame for upgrading or building backbone or last-mile services to each community;



- For backbone projects, the rates for wholesale backbone connectivity and co-location (gateway) services or last-mile service providers at the point of presence in each community;
  - For last-mile projects, the retail pricing and services to be available.
89. For backbone projects, monitoring and enforcement would focus on ensuring backbone funding recipients provide wholesale customers with equal access to subsidized backbone connectivity and gateway services at published and regulated rates. As noted above (paragraph 53), what is crucial is that open and fair access to the gateway be reliably enforced, either by the operations of a competitive market (in the event that competitive backbone facilities are available) or by the oversight of the Commission itself as necessary.

### ***Collecting and reporting information from applicants/recipients***

*Q12. How should section 39 of the Act be applied to information filed with the Commission and the third-party administrator(s)?*

90. The Commission adds further precision to this question with the discussion at TNC 2017-112 paragraphs 24 and 25. The CRTC requests input on the *“strategies [that] should be adopted to ensure the proper disclosure of information and documents”* between the Commission itself and the third-party administrators.
91. As the Commission recognizes, the question of how to apply rules concerning the confidentiality of information has significant implications for the operation of competitive markets and thus must be resolved if the new fund is to align with the broader ecosystem of Canadian telecommunications.
92. SSI therefore **recommends** that the Commission and third-party administrator(s) must both err on the side of caution in sharing information that has been produced for a different purpose than the administration of the fund, particularly if it has been filed in confidence.
93. Before disclosing information filed in confidence, the party that wishes to share the information should contact the information provider. The information provider should then be given the option of waiving confidentiality for the new purpose of sharing the information within the fund administration, or of making a new claim for confidentiality that relates to the specific purposes for which the Commission or the administrator(s), as the case may be, intend to use it.
94. To assist in this process, we commend the requirement that ISED has imposed upon applicants for Connect to Innovate funding, namely that they must mark each relevant item, page or document that they consider to be “Proprietary” or “Confidential” accordingly. This requirement will help the Commission and the third-party administrators to identify potentially problematic information before sharing it with one another.

*Q13. What information related to the performance of the fund should the administrator(s) be required to report on publicly?*

And

*Q14. How should project and fund results be shared publicly?*

95. Again, the Commission must balance transparency (guiding principle #3) against competitive and technological neutrality (operating principle #1) in determining what information the fund's administrators are required to share and in what form.

96. In SSI's view, the administrators should be required to report on:

- Numbers of applications received;
- Types of application (i.e. backbone or last mile, remote or rural community, type of technology(ies) proposed);
- Geographic area proposed to be served by each application; and
- The name of and amount awarded to each successful applicant, with details on the type of project, time frame covered, and outcomes committed to;

As mentioned above at question 7, we believe the Commission should also perform and publish annual reviews of the fund recipients and allocations to determine if certain applicants or categories of applicants – for example, ILECs – are receiving a disproportionate amount of the funding. If so, corrective measures, if appropriate, should be taken.

97. SSI also **recommends** that the fund's annual report identify the total funds dispersed as well as the proportion of funds collected that are spent on administration.

98. In terms of how project and fund results should be shared, SSI has two recommendations.

99. First, we **recommend** that the fund have an online presence so that it can easily and quickly communicate all reported data and metrics to the general public. The Commission should also make this information available through its own website.

100. Second, we **recommend** that the Commission include information about how the fund operates in its annual report to Parliament. This ensures a degree of accountability that is consistent with the CRTC's guiding principles relating to transparency and fairness.

*Q15. What performance measures should the administrator for the project management function impose on fund recipients for reporting purposes? For example, should recipients be required to participate in a broadband performance monitoring program?*

101. The project management function will necessarily impose on fund recipients the performance measures listed above (paragraph 99) so that the administrator can in turn meet its own obligation to report.

102. In terms of a broadband performance-monitoring program, this is effectively tied to Quality of Service metrics – which are very important. However, we emphasize that remote communities, particularly those that are satellite-served, have particular QoS challenges to overcome.
103. We moreover note here that the CISC Network Technology Working Group (NTWG) is currently reviewing QoS metrics are appropriate for high quality broadband, as directed by the Commission as a follow-up to TRP 2016-496. CISC is to review and report on:

*[...] appropriate metrics for latency, jitter, and packet loss to define high-quality fixed broadband Internet access services for the assessment of whether the broadband portion of the universal service objective is achieved. These recommendations should include (i) technical specifications, (ii) the identification of points of interconnection (POIs) in the ISPs' networks where these metrics would apply, and (iii) the methods which data on the service metrics could be collected and reported by ISPs in a consistent manner. The Commission expects that the quality of service metrics will reflect the objective that broadband Internet access services in rural and remote areas be of similar high-quality as those in urban areas.<sup>7</sup>*

104. We **recommend** that the work of the NTWG be completed and reviewed before the Commission makes a determination about the modalities of and participants in any broadband performance program.

*Q16. Should any other considerations be taken into account?*

105. SSI believes there is a need to ensure the administrative burden tied to being a fund recipient does not overwhelm or become disproportionate to the amount of funding received and operations of the recipient.
106. Moreover, the considerations should not be a static list – by the time the fund is operational there may be a need for altered criteria, and there has to be room for changes, additions and subtractions to be made. We would recommend that the criteria be reviewed by petition from any party, but no more than every three years, unless a truly urgent matter is raised that requires attention.

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<sup>7</sup> TRP 2016-496, paragraph 110.

## **Eligibility Criteria**

### ***Eligible geographic areas***

*Q17. Should an area with access to broadband Internet service speeds of 50 Mbps download, even if it does not meet all the criteria under the universal service objective, be ineligible for Commission funding? If you support that an area is ineligible for Commission funding if it meets the universal service objective, explain how each of the objective's criteria could be measured and evaluated (e.g. the quality of service metrics in a particular area).*

*And*

*Q18. Should the proximity of an area to the nearest fibre transport infrastructure (e.g. point of presence or point of interconnection) also help determine the area's eligibility for funding? If so, explain how an area's proximity to the nearest fibre transport infrastructure should be measured.*

107. The Commission explored its preliminary views concerning eligible geographic areas in paragraphs 28 through 33 of TNC 2017-112.
108. With respect, SSI submits that these preliminary views convey a strong potential to structure the fund in such a way that it violates our proposed operating principle #1, technological and competitive neutrality. These preliminary views are also largely inconsistent with SSI's proposed operating principle #2, which recognizes that the greatest need is in Canada's remote communities, and the greatest need in those communities is for the new fund to support open backbone (transport) facilities, not last-mile facilities.
109. At paragraph 30, the Commission proposes 50 Mbps, "the download speed criterion for fixed broadband Internet access service", as a "proxy indicator for meeting the broadband portion of the [universal service] objective, and by extension, for identifying geographic areas that are ineligible for funding." Using this proxy, about 18% of Canadians would live in areas that would be eligible for funding.
110. At paragraph 31, the Commission notes that because LTE technology is available to 97% of Canada's population, only areas beyond the footprint of this mobile wireless technology should be considered underserved. These areas include "major transportation roads" and the areas where a mere 3% of the population lives and works.
111. Further, at paragraph 33, the Commission expresses its preliminary view that applying these proxies, and adding the notion that terrestrial networks serving an area "should be capable of connecting to the fibre transport infrastructure" if it lies within two kilometres of a fibre transport point of presence (defined as the point that connects fibre transport infrastructure to the local last-mile infrastructure), should generally define areas that the Commission will consider to be underserved for purposes of access to the new broadband fund. The Commission added the proviso that "other factors" might also indicate that market forces or funding from other public entities "cannot reasonably be expected to deliver" USO-level service to the area, suggesting that these factors could require the support of the new broadband fund.

112. These paragraphs amount to *a preliminary conclusion that can strongly undermine technological neutrality* (SSI's operating principle #1). More significant, the preliminary conclusion, if it becomes the basis of the Commission's determinations about eligibility, will ensure that the new broadband fund cannot make a meaningful contribution to serving Canada's most remote communities.
113. The fact is that even if an area, especially a remote community, is covered by a network architecture that is, in principle, capable of delivering 50 Mbps download speeds – such as LTE mobile wireless technology, or wired connections over the “last mile” – this does not in any way guarantee that the residents and businesses in that community enjoy access at such speeds. The true limiting factor is the transport network that connects that local architecture to the Internet. Without an affordable backbone connection and transport facility of sufficient capacity, it simply does not matter how fast the last mile is. Users will experience only the speed, capacity and quality that can be supported by the backbone. Put another way, if the connection between that high-speed last mile and the Internet is small, users will quickly experience oversubscription and therefore reduced access, speed and functionality.
114. The Commission's preliminary conclusion suggests a bias towards funding the construction of last-mile access rather than backbone facilities. Moreover, it suggests a bias towards funding the construction of terrestrial, or fixed, rather than mobile wireless last-mile access facilities.
115. One might argue that such a bias is consistent with the evolution of the old local access subsidy regime to the new broadband funding regime. If the new fund is oriented in this direction, though, there is a real risk that the bulk of the new funding could very well go to upgrading and extending existing local terrestrial (that is to say, mostly ILEC) networks so that they are capable of delivering fixed broadband at defined speeds to the 18% of Canada's population that lies beyond existing fixed coverage. In SSI's submission, this would mean that the new fund is a missed opportunity to deliver broadband Internet access service where it is most needed in this country.
116. For the new broadband fund to go to underserved areas of Canada, as the Commission's first guiding principle would suggest it must, the Commission must adopt eligibility criteria as to geographic areas that start with the needs of Canada's most remote communities – not the needs of the communities within 2 km of a fibre link capable of delivering broadband Internet access.
117. Remote communities are not densely populated, especially in northern Canada, so ensuring that they have access to broadband Internet access service that meets the USO will not provide a rapid improvement in the coverage statistics that form the basis of the Commission's preliminary view. They are, however, in greater need of broadband Internet access than are much more densely populated parts of southern Canada. People in these communities cannot substitute easy access by road (or rail, or other means of transport) for electronic access: they do not have access to year-round roads. These are the parts of Canada that are truly underserved. They must be the focus of the Commission's attention in directing the new broadband fund.
118. As noted above, SSI currently covers all twenty-five Nunavut communities – all of which meet ISED's definition of “remote communities” – and SSI has invested in and deployed broadband wireless facilities that meet the LTE standard. This does not translate into these LTE communities

being served to the standard set for the USO, however, because SSI does not have access to the necessary backbone facilities. SSI has applied for Connect to Innovate funding to support our Qimirluk proposal. We detailed Qimirluk to the Commission in our evidence presented as a part of the proceeding initiated by Telecom Notice of Consultation 2015-134, precisely to remedy this situation.

119. In response to the Commission’s specific question 17, SSI submits that rather than handling the problem of applications to the fund for proposals that do not require funding by applying specific technological and market assumptions to define most areas of the country as ineligible, the Commission should instead establish rules that weight applicants more heavily when they do propose to serve remote communities with open-gateway backbone facilities. The funding management administrator should also be instructed to carefully examine any claim by an applicant that last-mile facilities cannot be established through the operation of competitive markets.
120. Only this approach can be consistent with the Commission’s stated desire that the new fund be technologically neutral, and to align with a broader ecosystem that relies, first and foremost, on the operations of a competitive market to deliver telecommunications to Canadians. In summary, the backbone must be open and shared due to the high cost of serving small populations. At the same time, the last mile must be open and competitive to allow service evolution and choice.

*Q19. The Commission could use hexagonal units of 25 square kilometres to define geographic areas. What are the benefits and challenges associated with this unit of measurement? If you suggest using other units of measurement to define geographic areas, provide supporting rationale and describe how to implement such units.*

121. We would support this unit of measurement. The most obvious benefit to such an approach is that it is the same one applied by ISED in their broadband assistance programs, for example, in the most recent Connect to Innovate program, as it aligns with ISED’s “online eligibility map” showing areas eligible for funding to enhance broadband access. See: <http://www.ic.gc.ca/app/sitt/ibw/hm.html?lang=eng>
122. This approach also aligns with the Commission’s own Broadband Internet Service Coverage map, which shows where broadband services are available across Canada and the technologies used to provide them. See: <http://www.crtc.gc.ca/eng/internet/internetcanada.htm>

*Q20. Should the Commission consider other criteria for identifying eligible/ineligible geographic areas?*

123. As noted above, the Commission should adopt an approach that is both technologically and competitively neutral. Rather than defining eligible/ineligible geographic areas by the proposed preliminary view, which is driven by the logic of terrestrial fibre as it has been rolled out by ILECs

and cable company CLECs, SSI urges the Commission to consider eligibility based on need. The suggested approach will clearly identify remote communities as eligible because of their need for access to backbone (transport) facilities.

124. We also note that the criteria for identifying eligible and ineligible geographic areas cannot be static. By the time the fund is operational there may be a need for altered criteria, and there has to be room for changes, additions and subtractions to be made. We would recommend that the criteria be reviewed by petition from any party, but no more than every three years, unless a truly urgent matter is raised that requires attention.

*Q21. If a geographic area does not meet the eligibility criteria established by the Commission, should applicants still have the opportunity to demonstrate that the area should be eligible for funding? If so, what evidence should applicants be required to submit?*

125. Yes. In terms of the evidence applicants be required to submit in such a case, we suggest that the Commission permit itself to be guided by ISED's Connect to Innovate Guide (the "CTI Guide"). In defining the considerations for eligibility of "partially served last-mile applications" (page 8), the CTI Guide lists documentation that can be produced to show local demand and support for the project as highlighted below:

*"For the application to be considered, the applicant must provide i) sufficient evidence to demonstrate that the specific area targeted by the proposed project does not have access to speeds of 5/1 Mbps and ii) **documentation that demonstrates support for the project by affected communities (e.g., letter from a municipality, municipal resolution, etc.). A municipality signing a letter of support must confirm that it has seen or been briefed about the evidence that will be provided to support the justification for a partially served last-mile project and agrees with it.**"<sup>8</sup>*

### **Eligible recipients**

*Q22. Should any criteria regarding eligible recipients in addition to those stated in the Commission's preliminary view be considered?*

126. SSI supports the criteria for eligibility in the Commission's preliminary view as set out in Appendix 1 to the Notice, specifically:

*Eligible recipients will be required to meet the following criteria:*

- *be legal entities, incorporated in Canada, that already operate or intend to operate broadband infrastructure. These include private sector companies; provincial,*

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<sup>8</sup>Innovation, Science and Economic Development Canada, "Connect to Innovate – Application Guide," at <https://www.canada.ca/en/innovation-science-economic-development/programs/computer-internet-access/connect-to-innovate/apply/applicationguide.html#s3.3.1.1>. Emphasis added.

*territorial, regional, municipal, and First Nations entities; and non-profit organizations. Individuals and federal entities (including Crown corporations) are not eligible.*

- *demonstrate experience in deploying and operating broadband infrastructure. If the entity does not itself have a track record in operating broadband infrastructure, it must demonstrate that it has appropriate resources with experience deploying and operating broadband infrastructure as part of its project team or contractual resources.*
- *demonstrate solvency and reliability through supporting documentation.*

127. However, SSI is concerned with the Commission's preliminary views concerning the eligibility of a public sector applicant that secures its own funding without private sector investment, proposed at paragraphs 35 to 37 of TNC 2017-112.

128. In SSI's submission, for the new broadband funding mechanism to "align with the broader ecosystem", as the Commission wishes it to do, it must fund private sector and mixed private-public proposals in strict priority over fully public sector applicants.

### **Eligible costs**

*Q23. Should any eligible costs in addition to those stated in the Commission's preliminary view be considered?*

129. SSI agrees with the items identified in the list of proposed eligible costs for both the Terrestrial and Satellite components of the fund, as set out in Appendix 1 of the Notice.

130. However, we believe the list should be expanded (we discuss this below), and we also **recommend** that the list of eligible costs not be restrictive. There should be room for discretion for an applicant to propose why a certain expense should be considered an eligible cost for purposes of the fund. This can be allowed by adding wording to the fund application guidelines provisions such as:

- *"Eligible costs will include, but not be limited to..."*

131. In terms of expanding the list of eligible costs, we would recommend that these include for both terrestrial and satellite components:

- Investments in training in the remote communities to develop local expertise able to support the network infrastructure assisted by the fund (backbone transport, gateways and towers, and last-mile), the delivery of services such as co-location, broadband, voice and new mobile products;
- Leasing or purchasing land, buildings and other facilities for housing network related equipment and offering gateway / co-location services (these are necessary for any telecommunications network. And a fund applicant can provide evidence of the fair value of the items claimed as required or requested by the fund administrators); and



- General repairs and ongoing maintenance resulting from the project and related structures; and
- As expanded further in response to question 44, below, with electricity an inescapable and important cost of running communications infrastructure, and given its high cost in Canada's remote areas, to allow the broadband fund to go further with every dollar expended, costs for innovative energy efficient equipment investments - especially green energy investments, should be considered for eligibility.

132. Finally, with respect to the satellite component of the fund, we believe it is necessary to be explicit that operating costs tied to the backbone project assisted by the fund are eligible under the fund. See in this regard our response to question 44, below.

*Q24. What costs should be identified as ineligible and why?*

133. As mentioned in response to question 23, above, we recommend that the list of eligible costs not be restrictive. There should always be room for discretion for an applicant to propose why a certain expense should be considered an eligible cost for purposes of the fund.

134. Some operating costs that are completely within the control of an applicant should naturally not be funded by a broadband fund of this nature. These will include advertising and marketing costs, as well as other overhead costs.

135. Accordingly, we believe that a better approach might be to list the costs that are clearly ineligible, as well as those that the Commission believes to be clearly eligible (question 23). The Commission and the fund administrator(s) could then make it clear that applicants may make the case for the eligibility of other costs, knowing that allowing such expenses is in the Commission's discretion to be exercised in view of the nature of the project. This is particularly true given the purpose of the fund, as stated TRP 2016-496 at paragraph 135, is that:

*"... the Commission's broadband funding mechanism will be aligned with existing and future broadband investments and funding initiatives; it will complement and not replace them."*

136. As a mechanism meant to complement other programs, we believe the CRTC broadband fund should allow for a broader scope of potential eligible costs to be covered than has traditionally been covered by other government programs, for example, ISED's Connecting Canadians broadband fund.

### ***Funding from a government entity***

*Q25. How should applicants be required to demonstrate that they have secured funding from a government entity (e.g. a promissory note or a signed funding agreement)?*

137. The Commission specifies, at paragraph 34 of TNC 2017-112, that this question relates primarily to “the stage in the [new fund] application or approval process at which applicants should secure this funding.”
138. As SSI has noted (paragraph 35, above), while the contribution of funds by a government entity is always welcome – and sometimes indispensable – to a private sector firm seeking to offer service in a remote geographic area, the Commission’s proposed requirement that an applicant demonstrate that it has government funding risks distorting the market and thus disregarding the operating principle of competitive and technological neutrality.
139. SSI submits that what the Commission needs is not evidence of government *funding*, but evidence of relevant government or government agency *support* as a proxy for public need and interest in the applicant’s proposal.
140. To require government funding in the same cycle or period as the application in order to render an applicant eligible for access to the new broadband funding mechanism potentially excludes two significant types of applicants:
141. Applicants which have secured significant government funding in the past, and thus demonstrated that their approach does meet the public interest, but which cannot access government funding in the current cycle because of factors entirely beyond the applicant’s control such as lack of availability or closure of a program; and
142. Applicants which have the enthusiastic support of government entities such as indigenous governments, which do not themselves have funds at their disposal that they can devote to broadband Internet access infrastructure projects.
143. Excluding these categories of applicants virtually guarantees that the new broadband fund cannot help connect remote communities in Northern Canada.
144. In Nunavut, for instance, Inuit organizations subject to the Inuit Land Claims Agreement do not have capital funds earmarked for infrastructure investments. They must demonstrate their support for an applicant in other ways, such as by mobilizing community support for and input to the applicant’s proposed services. Inuit organizations operate significant for-profit businesses and their support as a customer of the proposed services is often all they can commit.
145. Other government entities may only be able to contribute funding to an applicant in the form of a promise to use the telecom services that the applicant is eventually able to deliver through the backbone (or last-mile) facility for which it is seeking funding from the new broadband fund. Long term commitments from governments and similar commitments from indigenous organizations will allow the private sector applicant to attract the capital needed to finance the proposed project. Specifically, a 20-year commitment by indigenous and public government entities in Nunavut at their current spend rate would provide security for significant capital spending provided that the broadband fund is there to assist with operating costs.
146. Thus the stage at which funding is secured is less important, in SSI’s submission, than whether or not an applicant can demonstrate true public interest and support for its application by demonstrating the support of relevant governments and government entities.

*Q26. Should any government entities from whom government funding can be secured be added or removed to the following list, which was included in Telecom Regulatory Policy 2016-496: federal, provincial, territorial, regional, and municipal entities; Aboriginal governments; community entities; and non-profit organizations?*

147. SSI believes the list of “government entities” should be larger not smaller. We agree with the non-exhaustive definition proposed by the Commission in the Notice, which includes the entities reiterated in question 26.

148. We moreover recommend that the Commission specifically confirm that “government entities” will in fact include:

- Federal government agencies;
- Inuit and indigenous political organizations;
- Territorial and provincial government departments;
- Municipal governments;
- Agencies reporting to a provincial or territorial government that provide public services primarily funded by government, such colleges, housing corporations (public housing), and energy services; and
- Non-profits.

*Q27. Should the Commission define the terms “minimum,” “nominal,” and “commensurate” for the purpose of implementing the government funding requirement? If so, provide definitions.*

149. Consistent with our submission at paragraphs 133 to 139, above, SSI believes that defining terms to specify a required monetary contribution is not only unnecessary, but also counter-productive.

### ***Applicant investment***

*Q28. What evidence should applicants be required to provide that they are able to fund their own investment in the proposed project?*

150. Requiring applicants to demonstrate that they can fund their own investment in the proposed project aligns with the Commission’s guiding principles concerning the transparency, fairness and efficiency of the fund, as well as with SSI’s proposed operating principle #1. Competitive neutrality demands that the Commission and the funding management administrator(s) exercise a degree of flexibility concerning what evidence they require.

151. If an applicant can meet the requirements proposed in Appendix 1 concerning eligibility, reproduced at paragraph 129 above, that should go some way to constituting evidence that they are able to fund their own investment in the proposed project.

152. In addition, though, we recommend the Commission refer to and adopt the ISED approach as set out in the CTI Guide:

***Project Budget***

*The applicant must demonstrate that a funding plan is in place to finance the proposed project. [As supporting evidence,] include the following:*

- Independently prepared financial statements (audited, review engagement, or notice to reader) for the last three (3) years;
- Balance Sheet for the last three (3) years;[...]
- Pro Forma Financial Forecast broken down on an annual basis (for up to five (5) years after project completion) will be used to explain the financial viability of the project. [...]
- Identify all proposed funding sources as well as an assurance that funding to undertake and complete the project has been secured or can reasonably be secured. Funding assurance may include, but is not limited to a letter from a Chief Financial Officer/Chief Administrative Officer/Treasurer, a letter from a financial institution, or a Council Resolution of budget allocations.
- An estimated expenditure profile reflecting total eligible expenditures, by fiscal year and by funding source.
- Assurance of capacity to operate and maintain the service on a sustainable, long-term basis when the applicant is a not-for-profit organization or from a private sector.<sup>9</sup>

*Q29. Should the Commission define the terms “minimum,” “nominal,” and “commensurate” for the purpose of implementing the applicant investment requirement? If so, provide definitions.*

153. Consistent with operating principle #1 (competitive neutrality), SSI believes that each application and area will have special requirements. At this point, we do not see a need to provide further definition to these terms.

*Q30. What requirements, if any, should be imposed on public sector funding recipients regarding the ownership of Commission-funded assets after the initial capital expenditure (e.g. should there be requirements on when they are able to sell the asset)?*

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<sup>9</sup> CTI Guide, pages 25-26.

154. The Commission does not provide additional detail concerning its preliminary views on this question. It is difficult to suggest a hard-and-fast rule, given the range of possible government agencies and support arrangements that might be involved in achieving the USO in remote and rural communities across Canada.
155. However, at paragraphs 35 through 37, the Commission does raise the possibility that the fund might support applicants, the totality of whose funding is derived from the public sector. The Commission's question suggests how awkwardly such a funded recipient might fit into the "broader ecosystem" to which the Commission refers in its guiding principles for the new funding mechanism.
156. As noted above, SSI strongly urges the Commission to look on applicants whose funding derives completely from public sources as a last resort only.

*Q31. How should applicants be required to demonstrate that the proposal would not be viable without Commission funding?*

157. SSI notes that backbone projects to remote communities – the type of projects which we are convinced are most urgently required in order to give effect to the USO in underserved areas of Canada – are, almost by definition, not viable without some form of government funding, whether direct (such as ISED's CTI program) or indirect (such as the new broadband funding mechanism that the Commission will oversee). Other projects, such as last-mile access just beyond the 2 km mark from a fibre POP, are much more likely to be commercially viable and not require government support.
158. Therefore our initial inclination is to recommend that the Commission ensure that the project management administrator(s) have the capacity to critically examine the business plans that applicants make available.
159. SSI's proposed operating principle #1 also suggests another reason that the Commission not define too tightly the means by which applicants can prove non-viability. Technological neutrality, coupled with the multi-year time frame for which funding is envisaged, demands a flexible approach to circumstances where delivery requires the applicant to secure the rights to use a new technology, but securing those rights is dependent upon its likely ability to secure a critical mass of customers in a given geographic area. Past experience with the funding of mobile wireless technologies suggests that these circumstances might prevail when an applicant proposes to use 5G. These technologies are showing great promise for offering both fixed and mobile broadband Internet access services at very high speeds while using available spectrum resources extremely efficiently.
160. If the rules are too restrictive concerning the evidence applicants must adduce to prove that they need access to the broadband funding mechanism in addition to their own resources, the CRTC risks undermining the objectives of the new funding mechanism by excluding proposals that rely on new technologies such as 5G mobile wireless networks.

## Assessment criteria

### Project types

Q32. Should any other considerations be taken into account regarding the assessment of project types?

161. At paragraph 42 of TNC 2017-112, the Commission outlines some potential project types that might be given priority under the new funding mechanism:

- Fixed broadband infrastructure projects over mobile infrastructure projects;
- Access infrastructure projects over transport infrastructure projects; and
- New builds over upgrades of existing broadband infrastructure (that do not currently meet the criteria for the broadband portion of the universal service objective).

In footnote 8 to paragraph 42, the Commission further suggests:

*If the focus of the broadband funding regime is to **expand Canada's terrestrial broadband Internet access network**, new builds would be favoured over infrastructure upgrades. (Emphasis added)*

162. To be clear, SSI believes the fund should place the highest priority on new builds AND upgrades of backbone infrastructure to remote communities.

163. However, with respect to last-mile projects, SSI believes that the new fund should emphasize new builds over the upgrades of existing infrastructure, but minimize overlaps by supporting last-mile projects where existing infrastructure is capable of supporting broadband Internet access service. As the Commission further noted in the preamble to Appendix 1, the broadband fund should minimize, "if possible, overlaps in multiple projects and overbuilding existing coverage."

164. Consistent with SSI's operating principle #1, as well as all three of the Commission's stated guiding principles for the new fund (focus on underserved areas; align with the broader telecom ecosystem; and strive for transparency, fairness and efficiency), the new funding mechanism should not distort the operation of competitive markets for telecommunications in Canada. Nor should it influence the technology choices of private sector participants in those markets.

165. It **is** consistent with these principles to focus the fund on new builds over upgrades and to avoid using the fund to subsidize multiple – that is, potentially competing – projects as well as projects to overbuild existing coverage.

166. It **is not** consistent with these principles to establish project type priorities that favour terrestrial or fixed networks over networks that offer mobile broadband access. Not only is this a clear violation of the idea of technological neutrality that has guided key Commission decisions for the past twenty years; it is also short-sighted.

167. In TRP 2016-496, the Commission noted: "*It is crucial that broadband Internet access services in Canada keep pace with [...] global trends*" to "*enhance network infrastructures and to meet the growing demand for higher Internet access speeds*" (paragraphs 76 and 75).

168. Around the world, people are not only demanding higher Internet access speeds. They are also demanding mobility of Internet access. The Commission clearly recognizes that Canadians share these demands. The Chairman’s message in the most recent *Communications Monitoring Report 2016* highlights the top findings, which include:
- *It is clear that Canadians are shifting towards digital platforms and mobile technologies. In 2015, Internet data consumption grew by almost 40% while data traffic over mobile wireless networks increased by 44%.*
  - *Canadians across the country depend increasingly on wireless technologies in their daily lives and wireless services now account for 51% of all retail telecommunications services.*
169. A new broadband funding mechanism that supports primarily (or only) terrestrial fixed networks cannot contribute to satisfying Canadians’ demands for mobile data access in underserved parts of the country. Such a fund would be a wasted opportunity, privileging a technological choice that increasingly diverges from that of Canadians themselves.
170. A broadband fund primarily or exclusively focused on expanding “Canada’s terrestrial broadband Internet access network,” as suggested in footnote 8, is not only technologically and competitively biased. It could also exacerbate the impact of the affordability gap. Supporting only fixed access means that Canadians who do not have access to the Internet through a reliable connection in a workplace or one that they control at home, who therefore rely more heavily on mobile Internet access, will not be supported by this fund.
171. The suggestion that access projects should have priority over transport projects also violates the Commission’s first guiding principle and SSI’s proposed operating principles #2 and #3.
172. As noted above, for remote communities where the need for broadband Internet access services is most acute, the limiting factor is the availability of open, affordable backbone or transport facilities – not access projects. The absence of suitable backbone facilities is the reason that the actual Internet speeds delivered in remote communities in no way approaches the potential of the access facilities there, and thus cannot deliver on the Commission’s stated requirement that the USO represent “actual speeds delivered, not merely those advertised” (TRP 2016-496, paragraph 81).
173. For all these reasons, SSI **recommends** that the Commission abandon or even reverse the priorities that it suggests at paragraph 42 and in footnote 8. The Commission should be guided by the considerations suggested by its own guiding principles, together with the operating principles that SSI explains in this intervention.

### ***Project assessment criteria***

*Q33. How much weight should be placed on each project assessment criterion?*

*And*

*Q34. Should any of the assessment criteria set out in the Commission's preliminary view in Appendix 1 be modified or removed?*

*And*

*Q35. Should any other project assessment criteria be included? If so, provide a description of how they should be assessed and the weight that should be given to them.*

174. In Appendix 1 to TNC 2017-112, the Commission proposes that the new broadband fund assess applications according to fourteen criteria, "with a view to minimizing, if possible, overlaps in multiple projects and overbuilding existing coverage."

175. As noted above, SSI agrees that the fund should minimize overlaps between funded projects and overbuilding existing coverage.

176. However, as we have also discussed, we believe that it is more consistent with the Commission's guiding principles and SSI's proposed operating principles that the fund concentrate its limited resources on ensuring that remote communities have backbone to support broadband Internet access services that meet the USO criteria. Orienting the fund's priorities by where the need is greatest, rather than permitting funding options to be foreclosed by preliminary biases in favour of a specific technology or category of participants in the Canadian telecom market, results in a different and superior approach to weighting these criteria.

177. We note, first, that it is important that proposals be assessed in comparison to only those alternatives that target the same category of markets. Because by definition they cannot be served from a year-round road or are satellite-dependent, remote communities have different cost characteristics than rural or suburban communities. People in remote communities are likely to value some Internet-based services differently than other Canadians, simply because of their isolation from social, community and commercial resources that people in urban and suburban markets can access in person.

178. An approach that begins by considering the needs of remote communities first also has certain implications for the named criteria themselves.

179. With respect to weighting applications more heavily the greater the expected improvement in download and upload speeds, for instance, as SSI has consistently emphasized to the Commission in past proceedings, in remote communities facing constrained backbone capacity, speed alone can be an irrelevant or misleading factor:

*2428 So speed is a bit of a red herring. It's why I said, you know, I think things like oversubscription are more important. It's wonderful that we can go 220 on the Autobahn in Europe, but it would not be wonderful if there were 5 times as many cars on the Autobahn. You just couldn't get that speed.*

*2429 So speeds are a bit of a red herring if we don't also address congestion. And congestion is really a matter of oversubscription.<sup>10</sup>*

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<sup>10</sup> April 12, 2016 testimony of Jeff Philipp, SSI's CEO, at the CRTC hearing initiated by TNC 2015-134.



180. If many people share the same bandwidth, published speeds may never be met if too many people are using the same allocation (the oversubscription rate). At the same time, if the monthly data transfer allocation is very small, users will use up their basic bandwidth allocation in days. All three factors matter in concert: speed, capacity, and oversubscription rate.
181. Likewise, a focus on remote communities demands a more sophisticated measure of capacity than the Commission proposes (expected improvement in data transfer capacity per household in the community, measured in GB).
182. The caveat explained above concerning speed also applies to capacity. In addition, as SSI president Jeff Philipp explained in his testimony to the Commission in the proceeding that gave rise to TRP 2016-496, capacity may have to be measured differently for remote communities, where the number of persons per household is often quite high:

*2450 But when we use that [households served] as a metric to determine the number of subscribers, we're missing, to your point, the fact that there are six or eight people in that home. And we're already starting with constrained networks.*

*2451 So what we need to do is change the method that we use to evaluate capacity. If we went to a per-subscriber basis, we said, "What do we need on a per-subscriber basis?" Forget how many are in a home. Let's say 2 megabit because really, if you can stream a Netflix video at 1 megabit and you could also surf a little bit of web and I've seen my kids do it, they can three devices going -- but if you have 2 megabit and if everybody in your home had 2 megabit and there were six people, you'd now have 12 megabit allocated to you under some funding formula.*

*2452 And if we kept the oversubscription low enough, meaning not 50 to 1, not 50 people sharing 1 megabit, but more like 30 to 1, and reducing to 20 to 1 over the next 5 years, we could make the existing capacity work. We could make the capacity per household significant enough that usage caps wouldn't be a problem and stuttering internet wouldn't be a problem. But we don't need 20 megabit to do it or we need 20 megabit with a low enough oversubscription.*

*2453 So your point is valid. There are more people per home. And when we measure broadband capacity on a per-home basis, we get messed up in the north because we've got more people than the south and we don't have as big a pipe.<sup>11</sup>*

183. With respect to quality of service, we note that CISC has been tasked with defining appropriate standards. SSI does not object to weighting assessments according to their ability to deliver service of a very high quality.
184. The Commission has proposed to weight more heavily applications that have a higher level of financial contribution from a government entity.

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<sup>11</sup> April 12, 2016 testimony of Jeff Philipp, SSI's CEO, at the CRTC hearing initiated by TNC 2015-134.

185. As noted above, SSI believes that the requirement of government funding (not government support) is problematic. The proposal to weight the level of government funding is even more problematic for two additional reasons.
186. First, it potentially prejudices smaller, more remote and more economically challenged areas of the country, where there is less possibility that there will be a high level of government investment in telecom. Yet those areas are typically in greatest need of better connectivity and should be the new fund's highest priority.
187. Second, this weighting proposal is potentially at odds with the proposal to weight private investment more heavily (the next assessment criterion proposed).
188. SSI suggests instead that the Commission will be acting in a way that aligns better with the broader Canadian telecom ecosystem if it weights private sector investment more heavily, bearing in mind the need to consider efficiencies and effectiveness of the proposed investment.
189. The Commission also suggests that scalable projects be weighted more heavily in the assessment of competing proposals, and SSI concurs that scalability is extremely valuable. It is consistent with the Commission's three guiding principles, as well as SSI's proposed first operating principle, to avoid stranded investment wherever possible. Projects that are not scalable risk not being able to keep pace with customer demand. It is also more consistent with technological neutrality to value scalability, since it will force applicants to consider how the approaches they propose can grow over time.
190. The seventh criterion the Commission suggests is wholesale access. This accords fully with SSI's proposed operating principle #3, which emphasizes that the gateways to backbone facilities must be accessible on just and reasonable terms. *In SSI's view, wholesale access is not a weighting criterion: it is a **necessary** component of any application to build backbone or transport facilities which remote communities need.*
191. Eighth, the Commission proposes giving more weight to proposals that offer mobile as well as fixed broadband Internet access service.
192. While SSI absolutely concurs that proposals that offer users greater functionality should be given priority, we are concerned that this proposal also displays an underlying assumption, expressed in footnote 8 to TNC 2017-112, that the objective of the new funding mechanism is to build out terrestrial networks. As noted above, we believe that this departure from technological neutrality is unprincipled as well as being short-sighted.
193. SSI's proposed operating principle #2 emphasizes that for remote communities, the key need is access to affordable, reliable broadband backbone facilities. If this need is met with the assistance of the new funding mechanism, and if the backbone facilities meet operating principle #3's requirement of open gateways, then multiple last-mile technologies, wired and wireless, fixed and mobile, can connect freely.
194. The ninth criterion the Commission proposes in Appendix 1 is timeliness of project rollout. SSI agrees with the proposal to weight timeliness. That said, evaluating timeliness in a remote community backbone application will benefit projects that rely on existing satellites. We caution

that if this category is weighted too heavily in future calls, longer-term fibre or next generation satellite proposals may not be funded. This criterion must be measured carefully against all other factors, including technological neutrality.

195. Tenth, the Commission proposes to weight service coverage.
196. Again, SSi urges caution in applying this factor because of the overwhelming need of people living in remote communities for broadband Internet access service. These communities' need for service is such that it should outweigh considerations like a proposal's ability to serve "more households and businesses". Remote communities' need for service may also outweigh "greater geographic area covered," since remote communities are often clustered quite closely because of the nature of the terrain or other characteristics of the community itself.
197. With respect to coverage density, SSi agrees that applications should be given more weight "the greater the proportion of underserved households and businesses within the proposed project area". This will help genuinely underserved areas, such as remote communities, gain in priority for funding. However, the Commission must be careful that this weighting factor does not unduly privilege last-mile applications, where density can easily be calculated, over backbone facility applications.
198. The twelfth criterion proposed is "for the terrestrial component, applications will be given more weight the lower the cost per household." SSi queries the restriction in this proposed criterion to the terrestrial component. If the Commission's intention here is to signal a clear distinction between the satellite set-aside of 10% and the rest of the fund, designated the "terrestrial component", we must again protest that this implies a technological determination that will bias the application of the fund. If the intention is to restrict this component to last-mile facility applications, there may be some validity to the criterion. However, we note that operating principle #2 would privilege backbone over last mile facilities because of the need for such transport facilities to remote communities.
199. Sustainability, the thirteenth proposed criterion, is valuable, so long as it does not prejudice technological choice. In the context of remote communities, we would note that an essential component of sustainability is experience with designing and building both backbone and open gateway facilities.
200. We also note that "sustainability" also implies environmental sustainability. This could also be a valuable criterion for assessment, given the fragility of remote communities' access to power sources and their vulnerability to climate change.
201. The final criterion the Commission suggests is pricing. It proposes to accord applications "more weight the lower the monthly price for subscribers for a broadband Internet access service plan that includes a higher data transfer."
202. SSi notes again that this criterion implies a bias in the new fund towards terrestrial last-mile applications. We have addressed the implications of such a bias above. It will not result in remote communities receiving the backbone facilities that they require.

203. Retail pricing plans constitute a problematic assessment criterion for other reasons. Such plans are easily changed between proposal and implementation, for complicated reasons that relate both to factors that the applicant can control, as well as factors that it cannot. This is also a matter that the competitive market should determine wherever possible. SSI therefore **recommends** that the Commission remove this assessment criterion. Indeed, in the case of backbone projects, it is the wholesale price to service providers, not the retail price to consumers, which should be assessed.
204. Finally, SSI notes again the potential that almost two years will separate the current proceeding from the launch of the new fund. We therefore **recommend** that the Commission conduct a short proceeding immediately prior to launch to test the conclusions the CRTC reaches following the TNC 2017-112 proceeding against market, technology and other conditions at the time that the fund is actually launched. This may well affect the criteria that should be used to assess applications.

*Q36. Should subscriber uses and network resiliency be included in the list of project assessment criteria? If so, explain any anticipated issues and the weight that should be given to each.*

205. At paragraph 43 of TNC 2017-112, the Commission proposes subscriber uses and network resiliency as additional project assessment criteria that the fund should consider.
206. In SSI's view, the Commission should adopt resiliency as an assessment criterion that applies to both backbone and last-mile facilities. Consistent with the operating principles that we urge the Commission to adopt in designing the new broadband funding mechanism, we do not believe that the fund administrator should be asked to evaluate the utility of the proposed services to local subscribers. As with retail pricing, addressed above, the nature of proposed services and their degree of adaptation and utility to local users is a matter that the competitive market is best equipped to determine – not the *a priori* determination of a fund administrator.
207. With respect to network resiliency, this should be an element included in project assessment criteria. Redundancy and diversity options for backbone connectivity are essential for remote communities. Rather than relying on a single technology with a single source of supply, backbone networks can be comprised of satellite, fibre and microwave technologies.
208. Canada's North today lacks critical communications infrastructure, creating an ever-increasing digital divide between the North and southern Canada. Satellite-served communities are at a particular disadvantage. The situation can be resolved through long-term planning and substantial government and private sector investments.
209. The Commission knows that there must be a massive increase to backbone capacity, and deploying open gateway facilities will allow for competitive and affordable service options. While fibre may be an attractive technology choice for the backbone, when and where fibre first comes to previously satellite-dependent communities, it will likely come in phased build-outs. As it does, thorough planning will be required to determine the most desirable routes and the most effective strategy for backup and redundancy in the event of a fibre break.

210. As part of the review into fibre connectivity, SSI commissioned David E. Smith to explore and document issues related to network backup and redundancy, and the related risks of operating a northern telecommunications system with an evolving and complementary mix of satellite, fibre and microwave backbone transport technologies. His White Paper, entitled "Planning Backbone Redundancy for Nunavut Communications", can be found on the SSI website, at: <https://www.ssimicro.com/wp-content/uploads/2016/11/SSI-2016-11-24.pdf>
211. The paper describes well the issues that can be anticipated when planning for fibre, redundancy and network resiliency in Canada's remote communities. We have attached it to our intervention as Schedule 1.

*Q37. Should any other considerations be taken into account regarding project assessment criteria?*

212. As noted above, SSI believes the Commission should consider adding energy use (as a component of environmental sustainability) and redundancy criteria. The importance of the latter additional criterion is explained in Schedule 1, "Planning Backbone Redundancy for Nunavut Communications."

***Criteria to identify "priority underserved" geographic locations***

*Q38. Should the potential criteria identified in paragraph 46 of the notice be used to identify "priority underserved" geographic areas for funding?*

*And*

*Q39. Should any other criteria to identify "priority underserved" geographic areas be considered?*

*And*

*Q40. How should each criterion for identifying "priority underserved" geographic areas be measured/defined? How much weight should be given to each one?*

*And*

*Q41. What additional considerations should the Commission take into account regarding the criteria for "priority underserved" geographic areas?*

213. SSI has made its support clear for identifying "priority underserved" geographic areas for funding. We have defined these as remote communities.
214. However, SSI believes that that the criteria proposed at paragraph 46 of TNC 2017-112 are based on an incorrect premise. Thus they will not be useful to identify as "priority underserved" geographic areas those areas of greatest need of support under the broadband funding regime.

215. This is to say: the focus of paragraph 46 is on criteria that help evaluate communities with potential need for assistance in building out last-mile fixed broadband and mobile service projects.
216. SSI strongly believes that before last mile projects can be considered for fund assistance, wherever those projects may be, the highest priority has to go to project proposals: i) in remote communities; ii) for backbone projects.
217. SSI **recommends** that the Commission adopt the definition of “remote community” that ISED used in its Connect to Innovate program, quoted above.
218. The new broadband fund must then evaluate projects to serve such high-needs remote communities by comparing them to one another. If a remote community does not have access to backbone (transport) facilities that can deliver affordable or sustainable broadband Internet access services that meet the Commission’s USO standards, it should be considered a priority for assistance in upgrading available backbone facilities.
219. Only after the remote communities’ needs for affordable backbone facilities with open gateways have been met should the fund consider reviewing what last-mile technologies are available. In the particular case of Nunavut, SSI has expanded and deployed LTE technology that is capable of meeting the broadband speeds established by the Commission.
220. SSI does not believe that it should be a priority for the fund to put in place last-mile infrastructure that duplicates what is already available if the backbone to a remote community is not in a position to deliver, at just and reasonable rates, broadband capacity sufficient to support the Commission’s target broadband speeds. We note again the Commission’s focus on actual speeds delivered (TRP 2016-496, paragraph 81): backbone is the limiting factor for remote communities such as those we serve in Nunavut.
221. So, rather than looking at both “fixed broadband” and “mobile” projects, the Commission should look first to determine if last mile infrastructure, whatever technology, is in place or can readily be put in place or upgraded – without investment from the fund - in an applicant community able to deliver the commission broadband speeds, and if so, then to clearly focus on the backbone investments needed.

### ***Satellite-dependent communities component***

*Q42. How should this component be implemented?*

222. As suggested by the Commission’s first guiding principle, to use the fund to serve underserved areas in Canada, SSI fully supports setting aside a portion of the fund from the outset to meet the specific needs of satellite-dependent communities. These communities are, both by virtue of the definition that ISED uses of remote communities that SSI urges the Commission to adopt and in fact, currently among the least well-served communities in the country for broadband Internet access services.

223. However, we urge the Commission not to confine “remote community” funding to the ten per cent of the total funding available, as certain readings of the Commission’s proposals for the “satellite-dependent communities component” imply. The fund should be guided by need – not by proximity to existing terrestrial broadband networks.

Q43. *How should eligible satellite-dependent communities be defined?*

224. For "satellite-dependent communities", we agree with the definition advanced by the Commission at paragraph 49 of TNC 2017-112, specifically:

*[...] the Commission’s 2014 Satellite Inquiry Report defines this term as a community that has no connection to terrestrially based telecommunications facilities for connection to the public switched telephone network (PSTN) and/or the Internet, and that relies on satellite transport to receive one or more telecommunications services (such as voice, wireless [both fixed and mobile], and Internet services).*

225. In terms of what satellite communities are "eligible", quite simply, they all are. As discussed above, SSI believes that the Commission should follow the definition of “remote community” as set out in the CTI Guide to identify "priority underserved" geographic areas for funding. And all satellite dependent communities are part of that definition.

Q44. *What should be the eligible and ineligible costs?*

226. See our discussion in response to questions 23 and 24, above. In general, we agree with the Commission’s determination from TRP 2016-496, repeated again in TNC 2017-112 (paragraph 47) to the effect that for the satellite component of the fund “... *this component is intended to support operational costs and potentially certain related capital costs.*”

227. But in light of this determination, we believe the discussion of eligible costs for satellite communities proposed in Appendix 1 to the Notice needs to be more explicit. Specifically, we recommend adding the wording highlighted below:

*For satellite-dependent communities, eligible costs are the **operational and related capital** costs associated with improving the speed, capacity, and quality of broadband Internet access services in the community. These eligible costs will include those listed above, as well as satellite capacity and equipment costs, such as the portion of the direct purchase or lease of bandwidth or capacity, modems, satellite links, and any other costs directly related to building, **operating** and maintaining earth stations **and gateway facilities.***

228. As we discussed at question 23 above, without creating an exhaustive list, we believe it would be helpful to identify some of the “operational costs” and “related capital costs” that are eligible expenses for satellite-served communities.

229. We note here, in particular, that investments in training in the remote communities to develop local expertise able to support the network infrastructure assisted by the fund (backbone transport, gateways and towers, and last-mile), the delivery of services such as co-location, broadband, voice and new mobile products (as stated at question 23).
230. Moreover, with electricity an inescapable and important cost of running communications infrastructure, and given its high cost in Canada's remote communities, SSI **recommends** that the Commission refer to electricity cost specifically. From SSI's experience, energy costs to run communications infrastructure and gateway facilities in the North are, on average, five times the southern cost and can be as high as ten times in some communities.
231. Accordingly, operational costs in remote communities generally, not just satellite communities, should be supported to cover the cost of electricity for communication shelters and related gear, regardless of the backbone being funded.
232. And, to allow the broadband fund to go further with every dollar expended, costs for innovative energy efficient equipment investments - especially green energy investments, should be considered for eligibility.
233. Finally, with respect to ineligible costs for the satellite-dependent communities component of the fund, we refer to our response at question 24, above.

*Q45. Should any additional eligibility and/or assessment criteria be applied under the satellite-dependent communities component?*

234. Consistent with SSI's proposed operating principle #1, we **recommend** that the Commission account for the rapid developments in the satellite industry by reviewing its eligibility and assessment criteria briefly before the fund actually begins operation.
235. In that proposed review, as well, SSI urges the Commission to make it clear that remote communities are not limited to access to the 10% of the fund set aside for satellite-dependent communities.
236. In conclusion, we greatly appreciate the opportunity to participate in this proceeding, one that can lead to policy changes and actions to deliver positive benefits across Canada for decades to come.



**Schedule 1**

**David. E. Smith**

**“Planning Backbone Redundancy for Nunavut Communications”**

***- Filed separately with this intervention***

**\*\*\* End of document \*\*\***