Broadband Connectivity in Rural Canada

Brief to the

Standing Committee on Industry, Science and Technology

by the

Eastern Ontario Wardens' Caucus (EOWC) and the

Eastern Ontario Regional Network (EORN)

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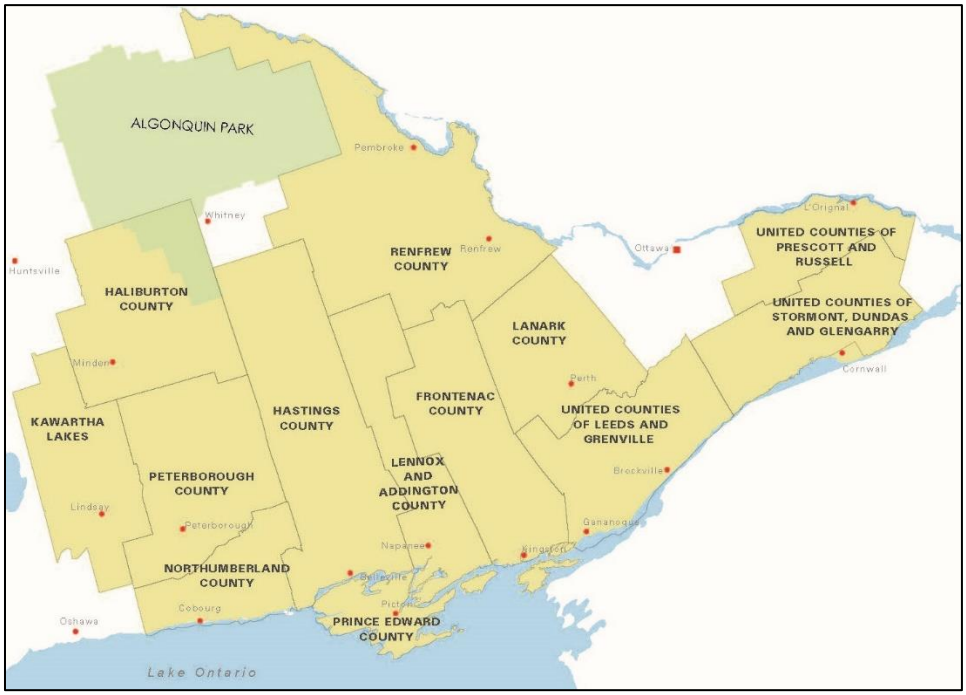
Introduction

1. EORN is pleased to submit this Brief on Broadband Connectivity in Rural Canada to the Standing Committee on Industry, Science and Technology. Our submission includes input based on our direct experience in delivering rural fixed broadband in a successful Public Private Partnership (PPP), our experience with funding programs and supporting regional economic development that leverages the internet, and our more recent activity with mobile broadband. We believe that that this background will be useful to the Standing Committee in its deliberations.

2. Nearly a decade ago, the Eastern Ontario Warden's Caucus (EOWC) recognised that a regional approach was required to address the broadband gaps within the 13 County and Single Tier municipalities representing over 750,000 residents in our region of 50,000 km^2. Working with our provincial and federal counterparts, the EOWC developed the Eastern Ontario Regional Network (EORN), and with private and public-sector investment of over $175M resulted in a successful broadband project that provided access to new or improved broadband services for 89% of our households at up to 10Mbps and a further 9% from 1.5Mpbs to 9Mbps. The project was completed in late 2014 and was delivered on time and under budget (EORN, 2014). EORN closely collaborated with its 6-private commercial Internet Service Provider (ISP) partners, who own and operate the network.



Map of Eastern Ontario

3. Our project was technology neutral, in that our procurement processes were designed to be open, fair and competitive, with a view to selecting service providers who would cover the largest number of households with a minimum speed requirement, for the most efficient use of our funding. At the time (2010) we required that the provider must be able to provide speeds of at least 10Mbps download and 1Mbps upload with at least 100 Gigabyte cap. This was at the same time that the Province of Ontario defined broadband at a minimum 1.5 Mbps. Our last mile projects included fibre

fed DSL, fixed wireless, satellite and fibre to the home services. The use of this technology mix, allowed us to provide the best service practical to local communities. Economic analysis and engineering estimates in 2010 suggested that if EORN had not chosen to be technology neutral at that time, and instead had insisted on delivering only fiber to the home internet services for Eastern Ontario, it would have cost over $1 billion to complete our original project. Fixed wireless gave us the broadest area coverage possible in the most cost-effective manner for less densely populated areas, while DSL and FTTH (in one small rural community) were the best solutions in local areas with higher density. Satellite services were deployed to ensure our best efforts in leaving no-one behind. In addition, we were able to provide fibre to over 60 business parks in the region.

4. EORN realised that in order to deliver internet to our region, we had to invest in both backbone and last mile. With our backbone partner chosen through a competitive request for proposal (RFP) process, we leveraged existing infrastructure and added more fibre to create a network of over 5500 km's of new fibre and upgraded over 160 Points of Presence (PoP's) to 10 GigE and scalable to 100 GigE capable. This investment is the core for current and future services in our region and has also fostered competition and new fiber to the home (FTTH) projects in several areas.

5. EORN was able to create a partnership that brought together federal, provincial, and municipal governments with private sector partners to deliver broadband access. Our success can be attributed to four main components of our model (EORN, 2017)
    A. **Regional leadership** – rural municipalities worked together to create sufficient critical mass
    B. **Evidence based** – detailed mapping and economic analysis quantified the problem, allowing us to break the region into smaller zones – allowing local carriers to bid within their markets, only intervened where there were clear cases of market failure, addressed needs in both easy and hard to serve areas.
    C. **Efficient and Effective Oversight** – Not-for-profit corporation with a consistent team of staff and consultants for the duration of the project, resulting in overall management costs of less than 6% of total project, long term binding contracts which included service level agreements
    D. **Public-Private Partnership** – leveraged private investments, diverse partnership including major carriers and local service providers, flexible funding model allowed governments share of funding to vary based on local needs, created win-win relationships for project partners

6. The EORN PPP Model is based on a fundamental principle of market failure in which public demand for high speed internet access is not being sufficiently addressed in rural regions by private sector ISP's due to the high cost of building broadband infrastructure. Using an evidence-based approach to identify market failure in a region, allows governments to invest the minimum amount of public funding necessary to stimulate the maximum amount of private investment that will be required to close the market failure gap. "A significant market failure is the failure to produce some goods and services, despite being needed or wanted. Markets can only form under certain conditions, and when these conditions are absent markets may struggle to exist. The most extreme case of a missing market is the case of pure public goods.

"Pure public goods clearly provide a benefit to the consumer, but, for several reasons, are unlikely to exist in a market economy. Examples of pure public goods include national defence, the police service, and street lighting. Because markets for these goods are not likely to form they are called missing markets and are considered a special case where demand exists, but supply is absent (Online, Economics, Last Accessed 2018-02-08)."

Broadband Internet services and infrastructure have evolved out of private sector innovation and investment in areas where there is sufficient population density to provide a competitive return on investment for building out the infrastructure. Today, rural communities require access to high speed Internet in order to participate in the digital economy, and under a purely market-driven model they either get no/insufficient access to broadband, or they must pay exorbitant fees. In this scenario, broadband Internet becomes an essential public good like street lighting or police services.

How should government agencies responsible for broadband programs best determine if there is a market failure situation which would merit the investment of government funding subsidies to stimulate the private sector ISP's to extend broadband infrastructure into rural areas?

a) Analyze the current and future supply of broadband infrastructure in a given area.
b) Map existing known middle and last mile broadband infrastructure assets.
c) Consult with ISP's to validate current and future infrastructure assets and plans to extend new infrastructure.
d) Identify the current and future demand for broadband Internet using industry analyst projections and modeling. E.g. (Cisco, June 6, 2017).
e) Determine if there is a gap between supply and demand.
f) Analyze what it would cost to close the gap between supply and demand using industry average infrastructure capital expenditure costs (CAPEX).
g) Using industry average economic analysis of internal rates of return (IRR) determine if the private sector would likely invest enough money to close the gap (include both CAPEX and anticipated operating expenditures OPEX)? IF YES – on what timeline would they close the gap? If the private sector is likely to close the gap with its own investment on a reasonable timeline, then there is no need for government investment.
h) If NO, then there is a situation of market failure and the government should intervene.

If there is a market failure condition, the following process should be considered:

i) Use a competitive procurement process to identify the most cost effective (least amount of government subsidy to achieve universal service objectives) way to close the gaps between supply and demand.
j) Negotiate service level agreements (SLA's) that require private sector broadband Internet providers to continue ongoing infrastructure investments in the future as demand grows and after they have started to generate revenue on the new infrastructure.
k) Retain ownership of a portion (51%) of the infrastructure assets in the public sphere for a reasonable length of time (7 years) in order to act as security against the delivery and performance of the conditions negotiated in the SLA's.

7. Despite these ongoing investments, with the expected continued growth in demand for internet, it means that both the private sector and all levels of government must expect to continue to invest in our networks to meet the consumer demand, through combinations of upgrades in the access technology and extension of middle mile fiber.

8. After the design was completed and we started construction on our original project, Netflix was introduced into Canada, and along with other video streaming services, it now occupies more than 70% of the overall internet data in our rural areas. With a compounded annual growth rate of over 20% for the last several years, this has far exceeded the original design characteristics of some of our last mile networks. Service level agreements in our contracts, require our private partners to invest in the networks to accommodate growth. Since the original EORN project was completed in late 2014, our partners have invested over $150Million to accommodate growth and incorporate the latest technologies.

9. Mobile communications are as important to rural consumers as they are to urban. The public's use of mobile services with respect to usage and capacity is equivalent to that in urban areas. While the density of use may not be there, the need is just as important. Mobile services are important for economic development, personal use, and in the future with autonomous vehicles and precision agriculture. Banks are closing in rural areas throughout Eastern Ontario, with consumers being directed to mobile banking. From a public safety perspective, the value of being able to communicate along roadways, fields and natural areas is important wherever residents or travellers live, work or play.

10. The Internet of Things (IoT) will drive demand in rural areas as well. The increased automation and tracking of products in agriculture, from monitoring environmental conditions in vineyards to animal monitoring and autonomous farm vehicles, will drive the demand for spectrum in our region. Many of the small businesses in our communities are already moving to automated inventory control.

11. EORN also believes that it is important that funding programs are accessible to small local internet service providers who can demonstrate an acceptable level of financial stability and service delivery. These local service providers, some of which originated as local telephone companies, provide local technical and well-paying jobs, and provide support to the community in many ways. Funding programs allocated to national players should not drive these organizations out of business.

12. Funding programs for rural broadband should include First Nations communities. EORN collaborated and built relationships with First Nations communities in the region to ensure that they too benefited from the project. After bringing high speed fiber into a PoP in Alderville, a new First Nations owned and run Internet Service Provider was established to provide service to the local community and create economic development opportunities.

13. Upon successful completion of the original $175 million broadband project in 2015, EORN built on this experience by developing a ten-year Digital Strategy: A Road Map to Digital Leadership (EORN, 2015). This 10-year Digital Strategy maps out our plan to leverage and build on this network to create thriving local economies and improved quality of life for our residents. To create a digitally

connected region, Eastern Ontario needs not just broadband access, but also the skills and capacity to use technology effectively. The Digital Strategy offers a road map for the region to embrace the economic and social benefits of internet-based tools to create strong, successful communities.

14. After our success in delivering a fixed broadband project, the EOWC tasked EORN to investigate solutions to address the mobile broadband gap that residents were identifying as part our regional dialogue. Using independent expertise, engineering coverage and capacity gap analysis was completed, resulting in a conceptual design and costing model. In the same timeframe, EORN became aware of work that was being done on Public Safety Broadband (PSBN) at the national level. EORN concluded that building a common Broadband infrastructure would result in overall savings for all parties. We extended our analysis and developed a conceptual design and costing that included PSBN infrastructure, resulting in nearly $50M in savings with a $299M combined project. We have presented our Business Case to both Federal and Provincial Ministries, have received positive feedback, and are working towards confirming funding.

15. Based on our analysis for the cell gap project, we estimate that 18% of the populated area or areas that contain major transportation corridors in region have no mobile coverage. In addition, 34% have coverage from only one major wireless carrier. These gaps are primarily due to market failure. EORN believes that our residents should have choice in their decision for a carrier.

16. One of the challenges that we see in effectively getting broadband out into rural areas is the definition of rural. In programs such as Connect to Innovate (CTI), this is loosely defined as all communities outside of population centers with more than 30,000 residents. In our region, we have communities such as Brockville with over 20,000 residents who do not view themselves as rural, yet with amalgamation we also have cities such as Kingston with large rural areas. We have rural areas near our urban centers, that expect the same service as an urban area, and the economics exist to provide such services. Yet we also have residents within 10 km of the major transportation corridor of HWY 401, who have limited access to fixed internet/mobile services, other than satellite. We also have rural areas with roads and municipal services, where the economics challenge providers to deliver services and market failure exists. Given that it is difficult to come up with a comprehensive definition, we ask that future funding programs allow some flexibility in the definition of rural, allowing an appropriate application of funding.

17. As a representative of rural communities, we feel it is important to continue to highlight the challenges faced by rural communities and underserved regions across the country. Private sector incentives to invest and serve our communities are significantly lower than in high density urban centres of the country, limiting the capacity of market forces to meet rapidly growing demand for broadband network resources, whether it be fixed or mobile. This currently leads to a digital divide between urban and rural areas of Canada.

18. EORN agrees with ISED that “Today’s economy is digital. …The information and communications technologies (ICT) sector is an enabler of the digital economy that is embedded in the transformations underway in industries, such as manufacturing, the automotive sector, agriculture

and financial services [1] ". The digital economy is also driving changes in our rural economy which is becoming more and more limited by the lack of connectivity.

19. EORN has spent an enormous amount of time and effort to create easily accessible educational materials to help residents, businesses and local governments fully utilize the benefits of access to high speed broadband. Individuals with new access to broadband may not realize the many ways in which it can be used to improve their social interactions and prepare them for our changing world – both globally and locally. This can help to reduce social isolation, improve education and skills, and improve personal/household prosperity. Digital literacy delivers direct benefits through reduced spending on social programs, as well as indirect benefits in the form of higher employment levels, stronger household incomes, and a stronger property tax base.

We thank the Committee for the opportunity to provide this brief and we would encourage the committee to seriously consider the adoption of the principles identified in the four pillars of the EORN submission to the CRTC Review of Basic Telecommunications Services in May 2016:

A. **Define high-speed/broadband Internet access as a basic service under the *Telecommunications Act*.** High-speed broadband internet is already essential for most Canadians to participate in the economic and social discourse of our country…. For rural communities, mobile network coverage and the availability of high-speed mobile data services with minimum service quality guarantees are critical for communication between our residents, visitors, and emergency service workers. We recommend including **both fixed and mobile broadband** in the basic service framework.

B. **Mandate concrete minimum standards of basic service**. Minimum basic service standards should be based on actual network performance, purchased consumer packages and long-term service level agreements for publicly funded projects. The Commission should mandate that, in addition to "best effort" retail packages currently available, operators also offer a basic retail service package that includes minimum service quality guarantees to residential and business users at a reasonable price.

C. **Complement minimum service standards with forward looking "aspirational" speed and reliability targets.** Future targets should be sufficient to encourage private sector operators to invest more in access and transport facilities in underserved communities.

D. **Develop a sustainable industry funded rural broadband infrastructure cross-subsidy mechanism.** The Commission has the legal authority, and we submit the responsibility, to require regulated entities to contribute funds needed to address current gaps and future growth in Canada's digital divide. These funds should be distributed through local intermediaries that are already taking the lead in identifying and addressing service quality and affordability gaps across the country, rather than an inflexible centralized fund distribution model that bypasses community level control and accountability. (EORN, 2016)

[1] Spectrum Outlook 2017-paragraph 5

Below are our responses to the three questions raised by the Standing Committee.

What constitutes acceptable high-speed service?

20. In their decision in December 2016 – the CRTC has defined 50/10 Mb as acceptable high-speed service. The CRTC's Universal Service Objective of 50/10 to 90% of all households by end of 2021 has almost been reached, if you live in an urban center. According to the CRTC's Communications Monitoring Report for 2017 - 84% of Canadian households are able to access this objective by the end of 2016. However, only 39% of rural households have access to this kind of service, versus 96% in urban areas.

21. Rural Canadians should have the same right to access broadband as urban users. EORN acknowledges that the costs to develop networks that would deliver these speeds are challenging. Very high-level estimates to bring reliable 50/10 service to most of the rural residents in Eastern Ontario alone approaches $1Billion.

22. We believe that defining acceptable high speed as 50/10 as a minimum objective is acceptable today but needs to be reviewed and updated at regular intervals - at least every 3 years. With the continued evolution of technology, and the number of devices connected for many consumers both rural and urban, by 2021 – the 50/10 standard will not likely be adequate.

23. Different communities and different users will have different definitions of what is acceptable high-speed service. Consultations at the local level with residents and industry were a critical input in the design of the EORN Model, while feedback from communities to the Wardens and municipal staff has helped us develop our future priorities. For example, over the past few years, residents, businesses, and public-sector workers have expressed significant concern about mobile network coverage and capacity gaps in Eastern Ontario, which have lead the EOWC to define addressing these gaps as a strategic policy priority, engage with technical consultants to map these gaps and model business strategies for addressing them, and search for private and public funding commitments to address the gaps we have identified. We recognize that our consultative democratic approach to program design is more time consuming than traditional centralized broadband funding programs. However, the evidence suggests that our regional approach to many of the problems that are now before the Committee has significant benefits in terms of subsidy targeting, cost control, and democratic accountability to the people we are elected to represent. We believe that local control and accountability ensures network growth and expansion strategies evolve to meet local needs and conditions.

24. Speed alone does not define acceptable high-speed service. Service providers generally describe their speeds as "up-to "because of the variance of the networks, especially in wireless networks. While consumers often struggle to understand this, they normally expect a minimum speed to be consistently delivered. Latency is also a factor in acceptable high speed. While satellite can be an excellent solution for many consumers, for others it does not meet the minimum requirements for their needs and sometimes even the task of filling in online forms is impossible.

25. The Federal government can play an important role in promoting investment in the quality of basic services regulated entities deliver by requiring them to extend the range of their service offering with a basic service package that includes minimum service quality guarantees (i.e. versus current "best effort" or "up to" offerings in the retail market). In addition to increasing these standards and making them more symmetric, we support proposals for requiring service providers to offer retail services that include minimum service quality guarantees of basic service to residential and small and medium size businesses that require a basic level of reliability in the fixed and mobile broadband services on which they depend. Improvements in the range of available services to include both best effort and offerings with minimum guarantees will benefit various user groups in Eastern Ontario and the rest of Canada, including public service workers, persons with disabilities, and productivity growth in small and medium size businesses.

26. Consumer package pricing also impacts the consumer perception of what constitutes high speed internet. High speed has to be affordable, with a range of package prices made available to the consumer. In general, we believe that urban and rural pricing should be the same. Affordability and service quality represent a barrier to fixed and mobile broadband use by low-income vulnerable groups that live in both rural and urban parts of the country. This indicates that gaps in achieving basic service objectives of the *Telecom Act* cross the urban-rural digital divide. While we recognize the complexity of the problem, it is relevant to point out that due to relatively lower incomes in rural communities, affordability and service quality concerns tend to be more pronounced than in urban areas where market forces tend to be stronger and disposable incomes are relatively higher. For example, Internet access for low-income children to conduct their homework represents an important concern for us, as does the connectivity of other vulnerable groups to whom we deliver public services and try to assist with our limited resources. Consequently, we welcome broader proposals for developing an affordability funding mechanism and adoption of a basic service package that enables those with limited means to access the basic communications services they need. Policies aimed at increasing demand and affordability of services by supporting low-income vulnerable groups can complement infrastructure improvement initiatives but should not be a considered a substitute for them.

27. The definition of what constitutes acceptable high speed (minimum targets) should not limit funding of projects that can economically exceed the minimum speed targets. Funding programs should not be limited to projects whose target is a Universal Speed Objective (50/10 at the moment). Projects that exceed the current standard should be encouraged and supported and evaluated based on overall value to the communities affected compared against other applications. Do not limit or penalise those who try and exceed the minimum objective with an economically viable solution.

What are the financial challenges of implementing high-speed services?

28. All levels of government should be prepared to subsidize rural broadband funding programs in demonstrated situations of market failure. The more ambitious the speed and capacity targets, the larger the size of the required contributions from operators that dominate low cost urban retail markets for fixed and mobile services. Assumptions about what standards and characteristics of services people need are implicit in various costs estimates that will be developed by all briefs

submitted to the Committee. If we add the short to medium and medium to long term high-level cost estimates detailed in the EORN submission to the CRTC in the basic service hearings (EORN, 2016), then we arrive at a total long term range estimate of between $6.2 billion to $11billion of investments that rural Canada needs in order to not fall further behind urban centres in terms of quality and affordability of access to basic fixed and mobile broadband services. The time horizon for making these investments will determine the amount that a sustainable funding model would have to raise from operators that dominate retail markets in low cost urban areas. Waiting for technological innovation to reduce the costs of fibre, 4G+ mobile, and satellite connectivity in the next decade is certainly a policy option, but not one that EOWC/EORN endorses or recommends.

29. Ask a different question: What are the financial and economic development advantages of implementing high speed broadband in rural areas? The Federal government should support a national research program to investigate both the economic impact of investing in rural broadband as well as the best practices for leveraging the investments in rural broadband programs. EORN and the Ontario Ministry of Agriculture, Food and Rural Affairs co-funded independent studies by the Monieson Center at Queens University, and Katherine Wood from Natural Capital Resources on:

A. FASTER, FURTHER: A Best Practices Review of the Eastern Ontario Regional Network Project. Kathryn Wood, Natural Capital Resources Inc. September 26, 2017 (Wood, 2016).
B. Broadband Strategic Research and Impact Analysis: Development of a Partnership and Evaluation Framework for Assessing the Social and Economic Impacts of Provincial Broadband Investments. The Monieson Center Queen's School of Business. August 3, 2011. (Monieson Center Queen's University School of Business, 2011)
C. Broadband for a sustainable digital future of rural communities: A reflexive interactive assessment. Journal of Rural Studies, (2016) 1-16, Laxmi Prasad Pant, Helen Hambly Odame. (Odame, 2016)
D. The Employment and Wage Impact of Broadband Deployment in Canada. Olena Ivus and Matthew Boland. March 20, 2014. (Boland, 2014)

These are the kind of evidence-based research driven decision-making tools and resources that should be considered and commissioned by the Standing Committee.

30. Often funding programs have a fixed percentage of government contribution. In our model, we have found that by allowing a varying amount of contribution depending upon the need of the area, allows better overall coverage. In other words, by varying the contribution within a broader project across hard to serve and easier to serve areas, more of the areas get served.

31. We agree with many of the submissions to the Standing Committee that investment in backbone and last mile should not be prioritised one over the other. Depending on the community requirement, either may be more or less important. Funding should be allocated to that which brings the most value to a community.

32. The cost of application and ongoing reporting can be quite high for smaller projects impacting the ability of smaller providers with limited resources to apply. This must be taken into consideration when developing programs.

33. With the EORN model of a regional approach, and multiple service provider partners, application costs and reporting costs can be absorbed into a broader group with efficiency of scale, leaving the service providers to do what they do best in building networks. There will still be reporting requirements for the providers to ensure financial accountability and engineering compliance.

34. With our initial project, we spent over $8M in Hydro pole replacement costs (4.5% of our total costs) to carry fibre. We have no dollar value on the cost associated with delays associated with pole analysis, permits, and construction delays while our providers waited for the replacements to be scheduled. Towards the end of the project, as we were adding additional small builds to improve coverage, we had areas that we couldn't fill because our partners would not be able to get Hydro poles replaced within the project timeframes. These pole replacement costs should not be funded out of broadband funds. Some of our smaller partners have identified that pole rental fees are impacting their business, and is especially frustrating when charged on poles, that they funded to be replaced. We generally agree with the comments made by the Independent Telecommunications Providers Association (ITPA) in their January 30, 2018 brief to the Committee on moving pole rental rates under the CRTC's jurisdiction.

35. The cost and availability of spectrum in the fixed wireless space impacts both our large and small partners. We explore this more fully in the section below on regulatory changes.

What regulatory changes would encourage the implementation of high-speed services?

36. The Government of Canada needs a National strategy on Broadband. This would allow the consistent development of program targets, create consistent, long-term and predictable funding programs and set overall expectations on the provinces.

37. There needs to be a separation of funding between rural and remote projects, with appropriate funding being given to both streams. The costs and needs of both are different and equally important. For instance, with the CTI program, there was a large expectation within the rural communities that the $500M would be directed to them.

38. Eligibility requirements for projects must allow for local community or municipal groups such as EORN, to apply in addition to service providers. Regional groups have vested interest and local knowledge of their communities.

39. Funding programs should be able to be targets at both communities that have no service, as well as those that are underserved. This mix of areas may make the business case for investment more attractive to service providers.

40. We believe that fixed and mobile spectrum is essential for rural areas. We currently have situations where there is no available spectrum for our service providers to use or purchase, resulting in overloaded networks as user capacity demands increase. As we understand the problem it this is

partly driven by organizations who have purchased blocks of spectrum and are not using them or have purchased large geographical blocks where the rural component is not being used while the urban part is. This could be addressed in future by ensuring spectrum tier size is appropriate and does not include a mix of urban and rural areas. As well we believe that there should be a "use it or lose it" part of the overall licensing provisions and applied retroactively to previously licenced blocks. This may also help prevent the speculative purchase by organizations, with no intent to directly use the spectrum, but resell it for their own profit.

41. The definition of "use it or lose it" and how it will be enforced requires further study. Given a realistic build schedule, we believe that there should be network builds underway to utilise the spectrum within two years of assignment, and 50% should be in use within 2.5 years of assignment. In some ways the best identifier of unused spectrum is an organization in need of the spectrum within the assignment block. If it is deemed unused – the owner should be obligated to sell or sub-lease it to the requester for the original purchase price (potentially with a small surcharge to cover the cost of the transaction) or sell to ISED at the original purchase price for resale to any other provider. We also believe that spectrum should be used in a reasonable service offering (commercially competitive), as opposed to one that is artificially created to hold on to the spectrum.

42. Furthermore, with respect to the area covered by a spectrum block, license sizes need to be reviewed to ensure that rural areas are not covered by a license that includes an urban area. This generally prevents smaller providers from bidding on spectrum where they cannot afford the cost of an urban license.

43. In addition, EORN believes that there needs to be regulatory practices in place that protect the public good and support the values of competition. We believe that spectrum set asides should exist for emerging players in the wireless markets, for both fixed and mobile. Many of the smaller ISPs in rural areas cannot afford to compete in auction for licensed spectrum and are limited to using license exempt spectrum. In conjunction with this, we also believe that there should be a resale limitation on the set aside, so that organizations cannot resell it for huge profit, or to major carriers who were not eligible for it in the first place.

44. Given the gap in meeting the service objectives in rural areas, and the likelihood of solutions coming from fixed wireless, EORN is concerned about the lack of priority being given to fixed wireless spectrum in the Consultation. In our own experience, service providers do not have access to sufficient spectrum to meet the demands of our residents.

45. The Government of Canada through ISED, needs to ensure that there is sufficient spectrum allocated to fixed wireless. Any re-allocation of spectrum (3500Mhz) cannot result in reduced service to our rural residents. Spectrum is very important to rural consumers. In our region approximately 275,000 households can only access the internet through either fixed wireless or satellite, many of which have no competitive choice. This represents just over 40% of the

subscribers on our project builds, and an estimated view of 75% of our rural households[2]. Many do have mobile coverage, but data costs are expensive relative to a fixed solution.

Summary of Observations and Recommendations

1) **Rural Canada has the same economic and social needs for both fixed and mobile broadband as urban Canada. In many ways Rural Broadband deserves the same focus and funding as Public Transportation in urban centers[3], because it is our essential form of transportation in a digital world.**

2) **The Federal Government should develop a National Broadband strategy that includes:**
   - **Identification of service objectives (speed and latency) and update it at regular intervals**
   - **Long-term predictable funding programs driven by evidence-based demonstration of market failure**
   - **Partnering with provincial and municipal governments**

3) **The Federal Government should create a National Digital Strategy so that citizens, businesses and governments are able to take full advantage of access to high speed broadband.**

4) **Funding program eligible recipients should include municipal organizations as well as service providers and private public partnerships**

5) **Funding programs should have varying amounts of contribution depending on the needs of the locale**

6) **Investment in backbone and last mile should not be prioritised over each other but dependant on the local needs and priorities**

7) **Steps need to be taken to address the cost and complexities of accessing other public infrastructure such as Hydro poles**

8) **Separate and appropriate funding programs for remote and rural areas should be developed in a complimentary fashion.**

9) **Fixed and Mobile spectrum is essential to rural users, and policy must be set in place to ensure that there is sufficient spectrum to meet current and future needs.**

10) **Use it or lose it policy must be developed to ensure that spectrum is not sitting idle.**

[2] Households outside of communities greater than 30,000 population
[3] City of Ottawa LRT Phase 1 is expected to cost $2.1B

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EORN - Who We Are

The Eastern Ontario Wardens' Caucus (EOWC) was created to support and advocate on behalf of the property taxpayers across rural Eastern Ontario. The EOWC covers an area of 50,000 square kilometres from Cobourg to the Quebec border, and includes 13 upper-tier and single-tier municipalities as well as 90 local municipalities. www.eowc.org

The Eastern Ontario Regional Network was created in 2010 as a not-for-profit corporation controlled by the Eastern Ontario Wardens' Caucus, with the objective of improving Broadband connectivity in the region. www.eorn.ca

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