Response to the

The Broadcasting and Telecommunications Legislative Review
'Responding to the New Environment: A Call for Comments'.

by the

Eastern Ontario Wardens' Caucus (EOWC) and the

Eastern Ontario Regional Network (EORN)

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Contents

EOWC/EORN Brief on The Broadcasting and Telecommunications Legislative Review

General Comments and Summary of Key Recommendations

1. Today's economy is digital, and it's a key component in the economic development of rural regions. In a recent **Eastern Ontario Economic Development Strategy Online Business Survey** conducted by the Eastern Ontario Leadership Council, 57% of the more than 250 participants identified internet connectivity and high-speed internet as the most significant impediments to growth in our region.

2. 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.

3. 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 expectations for collaboration with provincial partners. As part of this strategy, it should include evidence-based research on the financial and economic development advantages of implementing broadband and next generation communications in rural areas.

4. The continued demand on passive infrastructure associated with the rollout of current broadband technologies, and the expected increase in demand for access to infrastructure associated with 5G wireless, will require continued cooperation between all owners of the infrastructure to ensure that the service demands of Canadians are met. It does not require changes in the legislation that would take decision making away from municipal owners and assign the CRTC, or any other group, to direct access and associated compensation.

5. In summary
    a) 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
    b) Funding Programs should
        - Allow a variety of eligible recipients including intermediaries
        - Not prioritise investment in backbone and last mile over each other but dependant on the local needs and priorities
        - Develop separate and appropriate funding programs for remote and rural areas in a complimentary fashion
    c) Decision making on access to municipally owned passive infrastructure should remain with the municipalities including the ability to set reasonable financial terms.
    d) EORN's PPP Model based on the principal of market failure helps to drive innovative solutions that result in effective and affordable projects bringing key services to Canadians.

EOWC/EORN Brief on The Broadcasting and Telecommunications Legislative Review

e) With respect to consumer protection, the Federal Government can require providers to extend the range of their residential and small/medium size business service offerings with a service package that includes minimum service quality guarantees

f) EORN believes the role that ISED plays in overall spectrum management is effective, and does not warrant any changes

6. EORN thanks the Telecom Review Panel for the opportunity to provide input to the Legislative Review process and would be more than willing to respond to questions or attend any hearings to clarify our recommendations.

Our detailed comments follow:

Telecommunications Act & Radiocommunications Act

1. UNIVERSAL ACCESS AND DEPLOYMENT

1.1 Are the right legislative tools in place to further the objective of affordable high-quality access for all Canadians, including those in rural, remote and Indigenous communities?

7. 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 (CRM) 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. The CRM for 2018 shows no change for rural households (39%) being able to access the 50/10 objective.

8. 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 $1 Billion. EORN has a conceptual network design analysis underway with results expected by mid 2019 to develop a detailed understanding of potential costs.

9. These costs highlight the need for federal, provincial, municipal and private funding to fill these gaps.

10. Funding programs such as Connecting Canadians, Connect to Innovate and the proposed Broadband Fund, help to address some of the gaps in servicing rural, remote and indigenous areas, but overall, they have some significant flaws:
   - There is no overall national broadband strategy, that provides long term consistent funding
   - Broadband funding should be considered as part of a critical National infrastructure program, but it should not be forced to compete with roads, bridges and public transit for funding.
   - Projects are inconsistent and have no predictability in terms of requirements, the timing of inputs and awards. In fact, providers are on hold from making their own investments because

they don't know if they can leverage additional funding due to the delays in award notifications.

- Improved service to rural Canadians will not happen unless funding programs include both backhaul and local access
- Often limited to existing carriers, and don't allow for Intermediaries to participate. Current Federal funding programs do leverage some degree of private and provincial funding but not on a consistent basis. PPP projects like EORN and SWIFT have consistently leveraged municipal, provincial, Federal and private sector funding.
- Criteria for funding partnerships sometimes change during the program input and selection process, which results in ineffective and incomplete applications.

11. The Connect to Innovate Program was especially problematic. In the Eastern Ontario region multiple qualified small providers submitted reasonable applications. They continue to wait and have not been told whether they were successful or not. They are now considering reduced scope projects, that they may have started earlier if they had known the results. These result in continued delays in providing service to the residents of our region.

12. Federal funding programs must carefully balance the prioritization between rural and remote communities. Potentially there needs to be a separation of funding between rural and remote projects, with appropriate funding being given to both streams. Although the problems in supporting remote communities are complex, many rural communities will also not receive reliable service without the investment of federal funding supplementing private investment.

13. EORN also believes that it is important to allow a diverse range of organizations to apply for funding programs, including regional intermediary organizations such as ourselves. In our first project we successfully demonstrated the value of local knowledge and investment, the choice of the right technology to fit the local solution, enabled local competition and all done with a minimal 6% overhead. Our regional project also encouraged participation of local providers who are more likely to fill the gaps of rural communities. EORN also leveraged funding from municipal, provincial, Federal and the private sector, thus ensuring the maximum amount of leverage and investment.

14. 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 into the design of the EORN Model (EORN, 2017), 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. In 2013, our local Members of Parliament asked the EOWC to fix the problem. This led the EOWC to identify mobile broadband as its number one regional economic development priority. With the support and direction from EOWC, EORN has mapped these gaps and modelled business strategies to address them, and is working to secure private and public funding commitments to address the gaps that 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 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.

15. Canada needs a Broadband Strategy now that includes both wireline and wireless, fixed and mobile. It needs ongoing funding programs with dollar values that are realistic for the size of the problem. The programs need to have repeated and regular inputs and award timelines.

16. Part of this Broadband Strategy should address: What are the financial and economic development advantages of implementing broadband and next generation communications in rural areas? The Federal government should support a national research program to investigate both the economic impact of investing in rural broadband and 5G, as well as the best practices for leveraging these investments. 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:

   - FASTER, FURTHER: A Best Practices Review of the Eastern Ontario Regional Network Project. Kathryn Wood, Natural Capital Resources Inc. September 26, 2017 (Wood, 2016).
   - 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)
   - 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)
   - 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 as part of a national broadband strategy.

1.2 Given the importance of passive infrastructure for network deployment and the expected growth of 5G wireless, are the right provisions in place for governance of these assets?

17. EORN understands the importance of telecommunications network expansion as a critical step towards improved access for residents, businesses and travellers. The coming evolution to 5G mobile broadband will require the deployment of large numbers of small cell antennas across Eastern Ontario and nationally. Many of these sites will seek to be located on municipal passive infrastructure including all types of infrastructure, property and rights of way.

18. Currently, the Radiocommunication Act provides approval authority for small cell attachments located on municipal infrastructure authorization via an attachment agreement between the municipality and the telecom company. EORN believes that the approvals regime established by

EOWC/EORN Brief on The Broadcasting and Telecommunications Legislative Review

ISED under the Act is appropriate and should be continued. EORN also understands that the coming 5G evolution will require a nimble and consistent approvals approach by municipalities in order to support the timely roll out of this critically important infrastructure.

19. EORN and our municipal partners understand the economic and social benefits of improved communications. In rural areas municipalities are more than willing to partner with service providers to reach a timely and financially agreeable solution. Smaller carriers that we partner with have regularly confirmed that local municipalities are rarely an issue. There is no need for additional legislation by the CRTC to require access to passive infrastructure, removing control from municipalities.

20. If such changes are being requested by industry including controlling the financial aspects, we question why reciprocal agreements are also not required where municipal access requirements including public safety, can be required on telecom industry assets.

21. With our initial project, EORN 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 by the utility within the project timeframes. While we are able to only speak to our Ontario experience it seems to us that provincial utilities should be required to work like municipalities when it comes to access to their passive infrastructure. Fair and reasonable costs in the deployment of broadband infrastructure along with timely feedback should be expected as part of a provincial utilities response to access requests.

22. We are aware of a recent situation where the costs of a small community fibre project are potentially being doubled by the requirement of the provincial utility to replace a significant number of the pole infrastructure for unknown reasons. There is also no commitment to a timeframe, with an expectation of no completion within the year.

23. Despite the frustration and cost of such delays caused by the provincial utility, we do not recommend a broad sweeping change to the legislation for the CRTC to force municipalities to give up control of their passive infrastructure. Rather, in the case in Ontario, the provincial utility needs to establish a more timely, effective and cost appropriate approach to the use of its infrastructure to support the expansion of high-speed networks.

24. EORN is prepared to work with municipalities, municipal associations, ISED and the telecommunications industry to develop and to share 'best practices' with all parties as a way to support municipal interests and the timely expansion of traditional and mobile broadband infrastructure.

2. COMPETITION, INNOVATION, AND AFFORDABILITY

2.1 Are legislative changes warranted to better promote competition, innovation, and affordability?

25. EORN is not commenting on the implications and impacts of converged ownership of telecommunications and broadcasting companies.

26. Rural consumers in the EORN region benefit from the national/provincial pricing policies held by the major carriers/service providers, and the impact that it then has on the local service providers where there is competition. But in many areas – there is no competition, and often no providers due to market failure due to the high cost of building rural infrastructure and the lack of private investment.

27. EORN's focus has been to develop a methodology that promotes innovative funding models, open competition and optimising funding sources from all three levels of government (municipal, provincial and federal) as well as the private sector.

28. The EORN model created a regional project with public-private partnerships at all levels of government and with private investment, which was successful in delivering beyond scope, on schedule and under cost. While this model may not apply in all areas, it needs to be a potential option for funding programs and should be allowed in any relevant legislation.

29. The EORN PPP Model is based on a fundamental principle of market failure in which public demand for telecommunications access is not being sufficiently addressed in rural regions by private sector providers due to the high cost of building telecommunications 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. " (Online, Economics, Last Accessed 2018-02-08)

30. Telecom 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 these and future services in order to participate in the digital economy, and under a purely market-driven model they either get no or insufficient access, or they must pay exorbitant fees. In this scenario, broadband becomes an essential public good like street lighting or police services.

31. 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.

EOWC/EORN Brief on The Broadcasting and Telecommunications Legislative Review

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) 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.

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

a) 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.

b) 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.

c) 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.

3. NET NEUTRALITY

3.1 Are current legislative provisions well-positioned to protect net neutrality principles in the future?

33. EORN has no comment

4. CONSUMER PROTECTION, RIGHTS, AND ACCESSIBILITY

4.1 Are further improvements pertaining to consumer protection, rights, and accessibility required in legislation?

34. The Federal government can play an important role in promoting improvements in the quality of basic services that providers deliver by requiring them to extend the range of their residential and small/medium size business service offering with a service package that includes minimum service quality guarantees (i.e. versus current "best effort" or "up to" offerings in the retail market).

35. We continue to hear from residents in our region, who just want a basic package that will guarantee that they get a set rate independent of traffic load in the network. The intent is not to throttle all packages to a guaranteed rate, but to require at least one package at a reasonable guaranteed rate.

EOWC/EORN Brief on The Broadcasting and Telecommunications Legislative Review

36. 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.

5. SAFETY, SECURITY AND PRIVACY

5.1 Keeping in mind the broader legislative framework, to what extent should the concepts of safety and security be included in the Telecommunications Act/Radiocommunication Act?

37. EORN believes that in general public safety should be a right of all Canadians both urban and rural. This includes the entire infrastructure from the ability to place 911 calls from mobile and fixed devices, having the appropriate resources dispatched to the right location, ensuing that public safety workers be able to communicate with their own team in the field and at base, and interoperate with other first responder services, and be prepared for the next generation of technology.

38. While the technical aspects of health safety associated with telecommunications are addressed through ISED and should continue to be updated as required, there remains a major component of public information and education that needs ongoing investment at the federal level. The Federal Government should ensure that any potential health and safety issues are thoroughly examined, and that safety standards such as Safety Code 6 are updated and communicated as required."

6. EFFECTIVE SPECTRUM REGULATION

6.1 Are the right legislative tools in place to balance the need for flexibility to rapidly introduce new wireless technologies with the need to ensure devices can be used safely, securely, and free of interference?

39. In general, EORN believes that the role ISED plays in overall spectrum management is effective and does not warrant any changes. In fact, we would be concerned that the time to implement changes in this area would only delay the rollout of spectrum needed to support the introduction of new technologies.

40. We believe that spectrum for both fixed and mobile services are essential for rural areas. 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[1].

41. While maybe not relevant for this review, we believe that rural needs will require a range of flexible licensing schemes that may or may not be relevant to urban areas. This may include temporary licenses for periods in a seasonal agri-business to support autonomous equipment, to dynamic license assignments. It is important to ensure that legislation does not preclude creative uses.

42. EORN is pleased to see the ISED Consultation on smaller service areas, which is something over the last several years that we have been advocating for. This may help to ensure that spectrum is available for rural users and is not locked into larger urban blocks where only the urban area is used, and the rural part sits idle. It may also make spectrum more accessible for smaller local providers who cannot afford the cost of an urban license

43. While smaller tier sizes may help new releases of spectrum, there still remains the issue of spectrum hoarding. We believe that there should be stronger "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.

44. 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 smaller or 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.

7. GOVERNANCE AND EFFECTIVE ADMINISTRATION

7.1 Is the current allocation of responsibilities among the CRTC and other government departments appropriate in the modern context and able to support competition in the telecommunications market?

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[1] Households outside of communities greater than 30,000 population

EOWC/EORN Brief on The Broadcasting and Telecommunications Legislative Review

45. In general, EORN believes that the different roles that the CRTC and ISED play in the overall telecom environment are effective and does not warrant any significant changes. In fact, we would be concerned that the time to implement changes in this area would only delay decisions that need to be made to ensure the telecom needs of Canadians are met.

7.2 Does the legislation strike the right balance between enabling government to set overall policy direction while maintaining regulatory independence in an efficient and effective way?

46. EORN has no further comment in this area.

Broadcasting Act

EORN will not be responding to any of the questions associated with the Broadcasting Act.

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EOWC/EORN Brief on The Broadcasting and Telecommunications Legislative Review

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 nearly 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. This represents 750,000 residents across the region. www.eowc.org

The Eastern Ontario Mayors' Caucus (EOMC) is made up of the Mayors of the 11 urban municipalities (separated, single-tier) of Eastern Ontario.

The Eastern Ontario Regional Network (EORN) 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. EORN's Board consists of members from the EOWC, the EOMC and members of the public. www.eorn.ca

Nearly a decade ago, the Eastern Ontario Warden's Caucus (EOWC) recognised that a regional approach was required to address the broadband gaps across the region. 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

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. 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.

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.

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

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EOWC/EORN Brief on The Broadcasting and Telecommunications Legislative Review