

**Response to the
Consultation on a New Set of Service Areas for Spectrum
Licensing**

DGSO-002-18

by the

Eastern Ontario Wardens' Caucus (EOWC) and the

Eastern Ontario Regional Network (EORN)

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Introduction

1. 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, 10 Separated Cities, and six First Nation communities, representing in total over 750,000 rural residents in our region of 50,000 square kilometres. 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, delivered a successful broadband project that provided access to new or improved broadband services for 89% of our households. The project was completed in late 2014 and was delivered on time and under budget.
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. We continue to advocate on behalf of these communities in the areas of spectrum, the importance of public private funding, and the importance of these programs to address the digital divide.

General Comments

3. EORN continues to support ISED’s “policies that encourage service to rural areas to ensure that all Canadians benefit from high-quality services, ubiquitous coverage, and affordable prices. “
4. EORN has commented in many of our previous submissions including (EORN, 2018) that the smaller service areas may facilitate access to spectrum in rural areas, through affordable smaller licenses for smaller carriers in new auctions. In addition, the separation of large urban areas from rural areas is important to ensure accessibility to spectrum in rural areas, where the spectrum may be under-utilised in a larger service area.
5. EORN is looking at this with the lens of rural communities, and from the municipal perspective in supporting municipal and regional projects, as focused within our region.
6. We acknowledge the challenges that ISED has in determining spectrum tier service areas that are flexible enough to handle current and emerging use cases associated with 5G and IOT in both urban and rural areas.
7. The two options presented both offer interesting ways of creating smaller service areas and separating rural from urban.
8. Our concern with option 2 in creating service areas based on population centers, is that it will result in smaller “have“ service areas, and leaving what are effectively tier 4 size areas as “have nots”. Option 1 creates many smaller service areas, following municipal boundaries, and provides a different service area model, that may be more effective in addressing the emerging technologies, and allowing smaller service providers to enter the area.

9. ISED has a significant challenge to ensure that any of the approaches selected as part of this Consultation, do not contribute further to market failure in rural areas.
10. We thank ISED for the opportunity to comment on the consultation and would be more than willing to respond to any subsequent questions.

Responses to the Questions

Design Principles

Q1A—ISED is seeking comments on the proposed design principles when providing responses, include supporting arguments for or against the proposed principles.

Q1B—ISED is seeking any suggestions on additional design principles that should be considered.

11. EORN fully supports the design principle that “Recognize geographic differences: consider the unique characteristics of urban and rural areas in Canada”. We have one large tier 4 area (4-055) in our region that incorporates the City of Ottawa and parts of four of our rural counties, as well as extending 80 km north into Quebec. This variety of population density, economic needs, and municipal governance drives significant differences in deployment, funding opportunities and costing for spectrum in this service area.
12. With respect to the principle “Foster demand: areas should have either a population base or some economic value to support commercial viability”, there needs to be some flexibility in the definitions. There are rural areas that have a distributed population, or concentrated in communities of 100 households, that are of interest to smaller rural carriers.
13. The proposal that “boundaries are in low population areas to minimize potential interference issues”, may not be the only factor in setting boundaries. There may be some value to consider in some areas aligning the boundaries along Municipal boundaries. While EORN supports regional projects and the value in scale that they offer, we do see the value in smaller municipally driven and funded projects where having the spectrum boundary align with project could be appropriate.
14. It is also our understanding that with the current and emerging technology, interference issues along boundaries is becoming less of an issue. We do not support the use of buffers around urban areas in order to mitigate interference.

Boundaries based on Census Subdivisions

Q2A: ISED is seeking comments on the suitability of Option 1 in addressing the proposed design principles

15. Using census subdivisions as the service area boundaries would create approximately 110 service areas in our region of 50,000 sq. km. It clearly separates our rural areas from some of our larger population centers such as the City of Ottawa, or the City of Kingston.
16. It facilitates municipal applications for funding programs that require Tier 5 spectrum, by allowing the service area to be within the bounds of the funding municipality.
17. It would allow local service providers the ability to acquire spectrum in smaller targeted areas.
18. It generally provides a contiguous physical area for the deployment of spectrum.

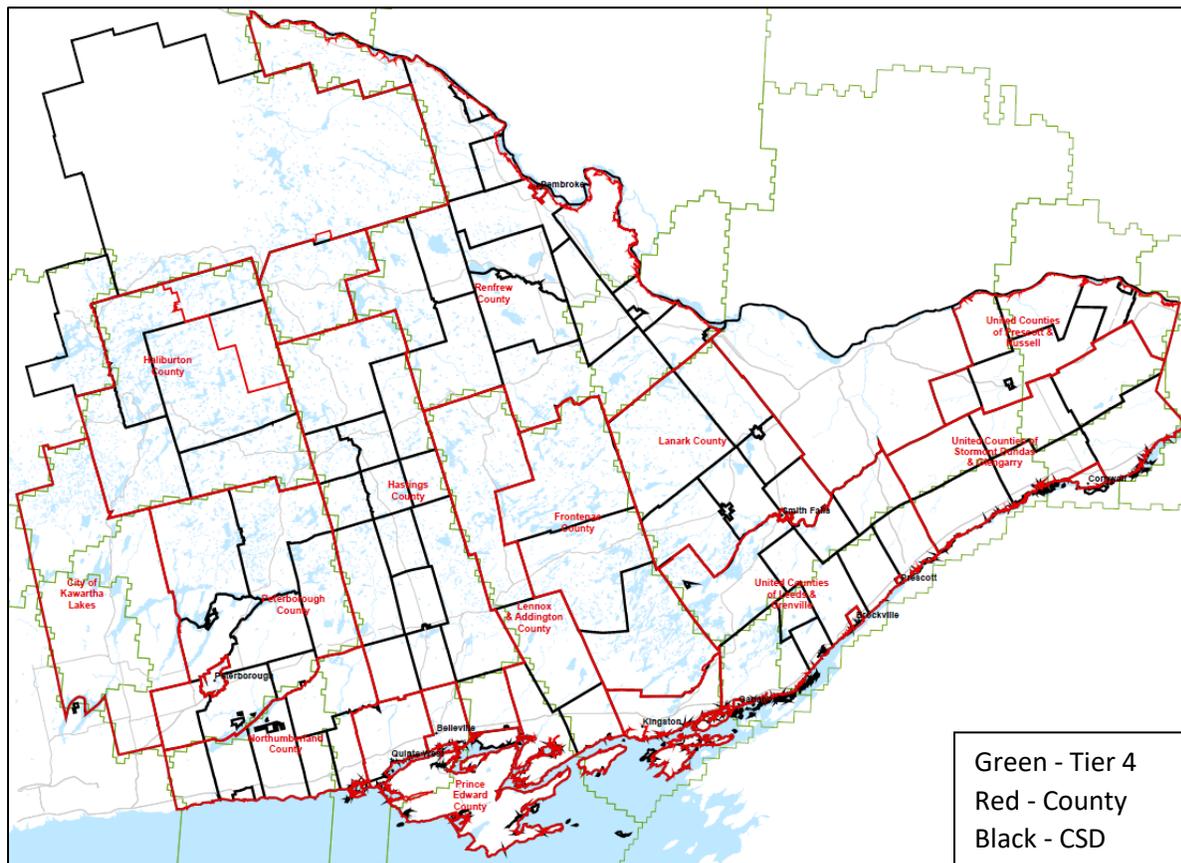


Fig 1: Eastern Ontario showing proposed Option 1 Tier 5 Service areas, overlaid with Tier 4

Q2B: ISED is seeking comments on whether adjacent urban CSDs should be combined into a single service area.

19. No Comment.

Q2C: ISED is seeking comments on whether there should be a minimum or maximum size for the service areas and if very small CSDs should be amalgamated into the larger surrounding or adjacent CSD.

20. Use of the census subdivisions as service areas does cause some irregularities in area and in population covered. For interest the Village of Westport has a population of approximately 600 (decreased by 6.1% over the last 5 years) and an area of 1.68 sq. km. It appears to be designated as a service area, as are other municipalities such as Gananoque (population 5159) and Prescott (population 3965). Kemptville is a population center of 3911 with an 8% growth over the last 5 years and is not a service area under the proposal. Data in this section was obtained from StatsCan 2016.
21. Smaller towns with populations of 4000 or higher and areas of 4 sq. km and larger, have enough market value for a carrier to invest in that area alone, and or potentially enough municipal resources to fund a project.
22. Combining a very small CSD with a population under 1000 and an area under 2 sq. km, such as Westport into its surrounding Rideau Lakes CSD which has a population of just over 10,000 and a land area of 729 sq. km, is a reasonable type of amalgamation, in that the smaller CSD is similar in needs with the reasonably sized bigger CSD.
23. In Option 1, EORN suggests that it would be acceptable to set a minimum size for a CSD to be designated as a service area. We suggest that the minimum size for a CSD be having a population center 4000 or higher and an area 2 sq. km and higher. Service areas with a CSD smaller than this could be amalgamated with a rural neighbour.
24. The challenge with small service areas, is that they make it difficult to roll out a larger network solution. It is a balancing act trading off encouraging local deployment versus the efficiencies of larger networks if someone is willing to invest.
25. The Option 1 approach introduces a maximum size that is significantly lower than the tier 4 service area. It provides a new option for ISED to use in licensing spectrum for emerging technologies.
26. There is some discussion that these smaller service areas should be licensed in some sort of shared approach or a first come first served, as mentioned in Option 2. EORN believes that this should be a condition of the actual spectrum licensed, not the definition of the service area. We do believe that there may be situations where there is an enterprise or agricultural situation, where licensing (either short term or long term) for a very small areas under 2 sq. km may be appropriate. In these situations, there may be other ways for the licensing to be applied such as a shared spectrum approach through some sort of Spectrum Access System. Another option may include some sort of

set aside for part of the spectrum to be applied to some sort of flexible licensing. But again, this should be associated with the spectrum itself.

Q2D: ISED is seeking comments to gauge if this option is suitable for northern and rural areas.

27. EORN believes that while this will create a large number of service areas, it provides flexibility in creating another type of tier or service area. This approach would work for rural areas such as ours, with a mix of urban and rural areas. We cannot comment on the suitability for remote areas (defined as no year-round road access).

Boundaries based on Population Centres

28. Option 2 using population centers as defined by Statistics Canada, with an adjustment to define the small centres from 2000 to 29,999, will result in Eastern Ontario with 35 small centres (2000 - 29,999), 4 small centers within the boundaries of the City of Ottawa, 3 medium centres (30,000 – 99,999) and 2 large centres (Kingston and Ottawa).
29. If these are all defined as service areas – with the remainder of each Tier 4 areas as “other”, Eastern Ontario (less the City of Ottawa), would consist of 39 population centre based service areas plus the remaining tier 4 parts for a total of 53 tier 5 service areas. This is approximately half the number of service areas as identified with Option 1.

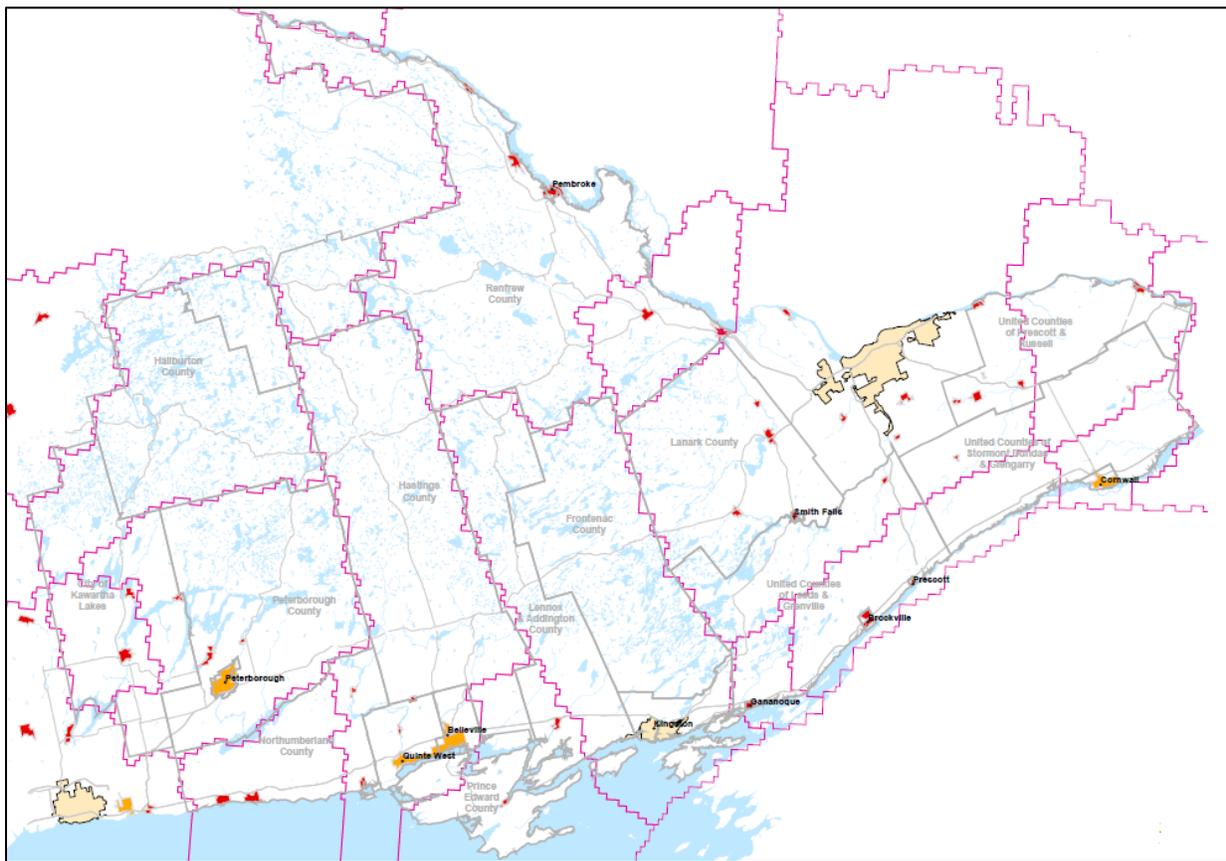


Fig 2: Eastern Ontario showing proposed Option 2 Tier 5 Service areas, overlaid with Tier 4

<p>Pink – Tier 4 boundary</p> <p>Red – small population centers</p> <p>Orange – medium population centers</p> <p>Tan – large population centers</p>

Q3A: ISED is seeking comments on the suitability of Option 2 in addressing the proposed design principles.

30. Option 2 is a clear separation of the urban areas from the rural areas. In the case of amalgamated cities such as that of Ottawa and Kingston, it even separates the rural areas of the amalgamated city from the more densely populated areas.
31. Option 2 has the advantage over option 1 in a smaller number of service areas (about 50% less in our region). This facilitates administration.
32. On the other hand, tier sizes are almost the same as the Tier 4 service areas, except the population centers are cut out. It still leaves large service areas that smaller carriers may not be able to afford. It may also not be suitable to some of the emerging technologies who will effectively use the smaller areas.
33. If something similar to this proposal is accepted, EORN strongly recommends that the “other areas” remaining in the Tier 4, be split into tier 5 areas such that all the service area reside within a single province. For instance, in our region the tier 4 service area 4-055 Ottawa/Outaouais, would be split into the population centers, plus a tier 5 in Ontario and a tier 5 in Quebec. This would still follow the nesting principle but would allow more regional approaches. Other similar service areas that span the Quebec Ontario boundary are as 4-053, 4-057 and 4-056.

Q3B: ISED is seeking comments on the proposed minimum population for small population centre service areas. A rationale should be provided if a different population is proposed.

34. While not in favor of Option 2, as in Option 1, EORN suggest that it would be acceptable to set a minimum size for a small population service area, as a population center under 4000 and an area under 2 sq. km, where this proposed service area could be amalgamated with a rural neighbour.
35. The risk with separating the smaller centers from the rest of the service area, is that you are creating large service areas with very low commercial viability. It is a balancing act between the two scenarios;
 - one where the providers leave idle spectrum in rural areas, because they only develop the urban core, and no-one else can use it and
 - one where the urban or populated core is separated from the rural area, but there is no commercial viability in the rural area

Q3C: ISED is seeking comments on whether the “other” service areas (remainder areas in each Tier 4) should be licensed differently (e.g. on a shared or first-come, first-served basis).

36. It is EORN’s opinion that this question should be dealt with at the actual spectrum licensing, and not be associated with the service areas. The concern with this question is does it represent a concern

within ISED, that the option 2 will result in service areas generally the size of a Tier 4, but without the commercial value associated with the population centers.

Q3D: ISED is seeking comments on whether this option is suitable for northern or rural areas.

37. The concern with this approach is that while separating large population centers from rural areas, it also creates tier 4 size areas with limited commercial viability. If the objective is to create smaller service areas that will create more flexibility in licensing, then option 1 is a better approach.

38. EORN cannot comment whether this is suitable for northern areas.

Q3E: ISED is seeking comments on whether population centres, which have adjacent boundaries, should be amalgamated to form a single service area.

39. EORN has no comment on this.

Alternative Proposals

Question 4: Alternative proposals

ISED invites interested parties to submit alternative proposals for smaller service areas. All alternative service area proposals must be applicable to all of Canada and promote the federal government's policy objectives.

Submissions should include a rationale for the proposal, an explanation of how it satisfies ISED's policy objectives and how it meets each of the proposed design principles, and any other relevant information. One or more maps should also be included, preferably including one which covers all of Canada. Maps should be in a format that is readily accessible by ISED (e.g. in ArcGIS or MapInfo format, or publicly available on the Internet with a link provided). Submissions should adhere to the requirements listed above in order to allow other stakeholders sufficient information to provide informed comments.

40. EORN offers no alternative proposal at this time.

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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 Lindsay 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 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 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 1.5Mbps 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. 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.

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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