

SaskTel Comments:

Gazette Notice DGSO-002-18

Consultation on a New Set of
Service Areas for Spectrum Licensing

February 15, 2019

EXECUTIVE SUMMARY

1. The following represents a summary of SaskTel's Comments in response to DGSO-002-18, *Consultation on a New Set of Service Areas for Spectrum Licensing* ("the Consultation").
2. SaskTel has reviewed the Department's proposals and compared the two options presented for the establishment of new Tier 5 service areas for spectrum licensing. SaskTel has also reviewed and agrees with the design principles suggested by the Department.
3. SaskTel believes that Option 1, where Tier 5 service areas will be defined based on Census sub-divisions (CSD) is the most appropriate option, particularly for rural and remote northern areas. The granularity of the Tier 5 service areas under Option 1 allows rural wireless service providers to cost-effectively acquire spectrum licences that best match their proposed coverage areas and target markets. Instead of having to acquire a large Tier 4 spectrum licence, smaller operators can choose to acquire spectrum composed of Tier 5 spectrum licences that are more suited to their business needs.
4. The acquisition of spectrum on a cost-effective basis has been a barrier for rural wireless service providers. The new proposed Tier 5 service areas offers the opportunity to encourage the deployment of additional rural wireless services by offering a mechanism for operators to acquire spectrum at a lower cost that meets their business needs.
5. SaskTel does not believe the use of Option 2 using population centres to define Tier 5 service areas will adequately serve the needs of rural wireless service providers. Option 2 merely separates the larger population centres with greater than 2,000 people and lumps the remaining area into a rather large "other" Tier 5, the area of which is often almost the size of the Tier 4 service area. SaskTel does not believe this would be beneficial to rural wireless service providers.
6. Any licensing model must take into consideration the requirements of not only densely populated urban areas, but also rural areas. Consideration must be given to the unique requirements of rural Canadians, and to ensure that any licensing

model utilized does not unintentionally hinder or impede new rural wireless deployments such as 5G services in rural areas. This may require unique models for rural areas. SaskTel believes the adoption of Option 1 to define Tier 5 service areas will further advance rural wireless services by reducing spectrum acquisition costs and providing more opportunities for rural wireless service providers to acquire suitable spectrum.

7. In particular, the Department is strongly urged to develop policies and licensing models that ensure that rural wireless networks can be deployed cost effectively using these new service areas. A cost-effective model is an essential pre-requisite to any rural wireless deployment.

INTRODUCTION

8. The following represent Saskatchewan Telecommunications' (SaskTel's, or "the Company's") Comments in response to DGSO-002-18, *Consultation on a New Set of Service Areas for Spectrum Licensing* ("the Consultation").
9. SaskTel has participated in the creation of the Radio Advisory Board of Canada (RABC) response to the Consultation and supports the RABC submission. SaskTel's comments on this Consultation are meant to clarify our position on certain questions and issues raised by the Department.
10. The section numbering of the remainder of this document corresponds to the numbering of the consultation paper released by the Department. Failure to address any particular issue or item, or the Comments made by any other party, should not be construed as agreement with those Comments where such agreement is not in the interests of SaskTel.

SASKTEL RESPONSE TO THE CONSULTATION

5. Design Principles

5.7 Proposed design principles

Question 1: Design principles

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

11. SaskTel agrees with all of the proposed design principles. The design principles as proposed by the Department in the Consultation¹ are stated below along with SaskTel's comments on each principle.
12. Recognize geographic differences: SaskTel strongly agrees that a new Tier 5 set of service areas must properly consider the unique characteristics of both urban and rural Canada. Rural service providers are challenged with providing service to communities with low and very low population, and in many cases larger areas with very low population density. Service areas must be small, (granular) and adaptable

¹ The Consultation, paragraph 36

to facilitate this deployment. In many cases the Tier 4 service areas are too large for these deep rural deployments.

13. Foster demand: SaskTel believes it is essential that the new proposed Tier 5 service areas allow for a lower cost for small rural wireless service providers to acquire spectrum for rural deployments. More affordable licensing along with appropriate Tier 5 spectrum licences that better match the coverage areas and business needs of smaller wireless service providers will encourage more rural deployments and increase penetration of wireless services in rural areas.
14. Maintain technological and competitive neutrality: SaskTel agrees that the new Tier 5 service areas should not favour or discriminate against one particular technology, or group of stakeholders. Licence holders should not be restricted in their choice of technology to serve their customers, and as technology is always evolving it is important that wireless service providers have the flexibility to evolve their network deployments.
15. Minimize potential interference issues along boundaries: SaskTel agrees that interference issues need to be minimized along boundaries between service areas. Although the Department's approach of having service area boundaries run through low density population areas does help mitigate interference issues, there are other approaches to interference mitigation. Advanced wireless technologies and network designs also offer mechanisms whereby interference can be mitigated. Some examples include the use of lower power small cell technology, and antenna down-tilting and discrimination. This usually requires co-ordination between operators, and can be challenging at times, particularly when different technologies are deployed.
16. Ensure Tier 5 service areas nest within existing Tier 4 service areas: SaskTel also agrees that proposed Tier 5 service areas must align with existing Tier 4 service areas to maintain continuity with ISED's existing licensing structure.
17. Use ISED existing grid cells as constituent building blocks: SaskTel agrees that the new Tier 5 service areas should use the existing ISED grid cells as building blocks in order to align with ISED's existing licensing structure.

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

18. At this time SaskTel does not have any suggestions for additional design principles for consideration by the Department. We believe that the design principles given above are sufficient to develop effective Tier 5 service areas. SaskTel reserves the right to comment on additional design principles suggested by other commenters in their responses to this consultation. SaskTel also reserves the right to suggest additional design principles to the Department after our review of the comments submitted in response to this consultation.

6. ISED proposals for a new set of smaller service areas (Tier 5)**6.1 Option 1: Boundaries based on Statistics Canada 2016 census subdivisions****Question 2: Option 1 - Boundaries based on Statistics Canada 2016 census subdivisions****Q2A - ISED is seeking comments on the suitability of Option 1 in addressing the proposed design principles.**

19. After reviewing the Department's proposal for Option 1, SaskTel believes that Option 1 is feasible and suitable for Tier 5 spectrum licensing, and SaskTel has a preference for Option 1. The Statistics Canada Census sub-division (CSD) boundaries are based on municipal boundaries and therefore well-defined. The CSD boundaries will also change and adapt to future population trends as populations grow and/or shift around.
20. With Option 1 the wireless service provider has the option to acquire the appropriate adjacent (or perhaps non-adjacent) Tier 5 service areas that will match their proposed network deployment.
21. When comparing the proposals for Options 1 and 2 in this Consultation, SaskTel prefers Option 1. We believe overall Option 1 provides more flexibility to accommodate different business models for different operators.
22. Amalgamation of Tier 5 spectrum licences by a licence holder is possible, either in an auction process or in the form of a First-Come First-Served licence process.

This will make access to spectrum easier in rural markets. Potential service providers can, as much as possible match their target markets with the available Tier 5 spectrum licences and acquire spectrum best suited to their business needs. SaskTel believes this will be easier to administer using Option 1 rather than Option 2.

23. By offering the option to acquire Tier 5 spectrum licence(s) that better match their planned coverage areas and business needs, rural wireless service providers are offered a mechanism to acquire spectrum licences in rural areas that are potentially more affordable. This will encourage more deployment of wireless services in rural areas.
24. Furthermore, SaskTel believes that Option 1 does suitably address the proposed design principles. The Census sub-divisions clearly define urban and rural population areas, allowing for the appropriate business models and service offerings to be applied by licence holders.
25. Considering that the Tier 4 service boundaries are also based on Census sub-divisions, the proposed Tier 5 service areas will nest into the existing Tier 4 service areas using the same set of CSDs. This will allow for full alignment with the existing ISED licensing structure.

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

26. SaskTel believes that adjacent urban CSDs should be combined into single Tier 5 service areas, except where this amalgamation would cross a provincial or territorial boundary. Adjacent urban areas would generally benefit from having a uniform service offering from a wireless service provider across the entire urban area.
27. However, in cases where adjacent urban CSDs are separated by a provincial boundary, SaskTel believes it would be more appropriate to designate the adjacent CSDs as separate Tier 5 service areas. Some examples include Ottawa, ON and Hull, QU, Restigouche, QU and Campbellton, NB, and Lloydminster, AB and Lloydminster, SK.

28. Keeping Tier 5 service areas within provincial boundaries provides the most flexibility for wireless operators, particularly for smaller service providers, in giving the option of acquiring only the spectrum in the service areas they desire, i.e. in one of the service areas or optionally in both service areas. If the areas were combined, this would remove all options for future flexibility for acquiring spectrum and providing service to these adjacent service areas in different provincial jurisdictions.

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.

29. SaskTel believes that the greatest advantage of the new proposed Tier 5 service areas will be that operators will be able to cost-effectively acquire spectrum and therefore allow them to provide wireless services in rural and remote areas. Therefore, SaskTel believes that the new Tier 5 service areas should include all but the smallest population centres, i.e. very small towns and villages should not be included. SaskTel recommends that rural CSDs smaller than two square kilometres in area should be amalgamated into the surrounding or adjacent CSD.
30. This minimum size of Tier 5 service area would strike a good balance between providing Tier 5 service areas for serving small to medium sized towns, and reducing the burden of creating and administrating large numbers of Tier 5 service areas for very tiny villages.

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

31. SaskTel believes that Option 1 would be a viable solution for defining Tier 5 service areas in northern and rural areas. The use of CSDs is appropriate for defining Tier 5 service areas that would include the large, medium, and small communities, and using CSDs will also allow the remaining rural areas to be defined into reasonably sized Tier 5 service areas suitable for deployment of wireless services.
32. For remote northern and rural areas, there are however large regions designated by Statistics Canada as “unorganized divisions”. These areas can be quite large,

and it would not be practical to consider a large or a very large “unorganized division” as a single Tier 5 service area. The population of these unorganized divisions is typically low, and most likely living in population clusters throughout the large unorganized division. For these areas, it would be more appropriate to consider a form of grid cell licensing to define a geographic region and allow the spectrum to be made available based on grid cells within the “unorganized divisions” for rural service providers at a reasonable cost.

6.2 Option 2: Boundaries based on population centres

Question 3: Option 2- Boundaries based on population centres

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

33. SaskTel has reviewed Option 2 as proposed by the Department and compared the benefits and drawbacks of Option 2 versus Option 1. SaskTel prefers the use of Option 1 as the basis for the new proposed Tier 5 service areas.
34. Option 2 as proposed merely separates the larger population centres above 2,000 people into Tier 5 areas, and leaves the remaining geographical area within the Tier 4 into one Tier 5 service area. SaskTel does not believe this will encourage the deployment of rural wireless services, particularly by small operators. These operators will instead be encouraged to serve the larger communities. Most residents in the “other” Tier 5 area will likely not be serviced because small operators will be required to acquire a Tier 5 spectrum licence almost as large as the Tier 4 service area but with a very low population. Smaller operators will likely serve only small portions of the “other” Tier 5 service area, leaving large areas unserved, and the spectrum being underutilized.
35. As SaskTel has described in our response to Question 2 on Option 1, the use of CSDs will provide the granularity and flexibility for wireless service providers to acquire Tier 5 spectrum licences that better match their proposed coverage areas.
36. SaskTel does not believe that Option 2 adequately addresses the design principles as described in the Consultation. In particular, we do not believe this option will foster growth in rural wireless services, other than in the larger population centres

which would likely have been serviced by a Tier 4 licence holder. This defeats the purpose of using Tier 5 service areas.

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.

37. As noted above, SaskTel does not prefer the use of Option 2 for defining Tier 5 service areas. However, if the Department chooses to implement Option 2 for Tier 5 service areas, SaskTel would not object to the proposed minimum population size of 2,000 for small population centres.

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).

38. As noted above, SaskTel does not prefer the use of Option 2 for the definition of Tier 5 service areas. However, should the Department decide to implement Option 2, SaskTel would suggest that the “other” remaining area of each Tier 4 be licensed on a first-come first-served basis using a form of grid cell licensing to sub-divide the Tier 5 “other” area. Small rural operators can then have the flexibility to acquire spectrum with a service area that matches their proposed coverage area and is suitable for their business needs.

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

39. As noted above, SaskTel does not prefer the use of Option 2 for the definition of Tier 5 service areas. Option 1 is more suitable for wireless service providers offering service in northern and rural areas.

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

40. Although SaskTel does not prefer the use of Option 2 for the definition of Tier 5 service areas, should the Department choose to utilize Option 2 SaskTel would recommend that population centres with adjacent boundaries be amalgamated into

a single service area, except where the population centres are divided by a provincial boundary. SaskTel would recommend in those cases that the two population centres be divided into separate Tier 5 service areas along the provincial boundary.

41. Maintaining a provincial separation at the Tier 5 level allows flexibility for wireless service providers, particularly smaller rural wireless service providers, to acquire Tier 5 spectrum licences that match their proposed coverage areas and business needs. These smaller wireless service providers would have the option of acquiring either one or both adjacent Tier 5 spectrum licences as they desire.

7. 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 publically 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.

42. At this time SaskTel does not have an alternative proposal to present to the Department. As described in our response to questions Q2A through Q2D, SaskTel believes Option 1 would be suitable for the definition of Tier 5 service areas in urban, rural, and remote rural and northern areas.
43. SaskTel reserves the right to comment on alternative proposals as presented by other commenters submitting responses to this Consultation. SaskTel also reserves the right to suggest alternative proposals to the Department after our review of comments submitted in response to this consultation.

CONCLUSION

44. SaskTel has reviewed the Consultation, and has examined both Option 1 and 2 as presented in the Consultation for the definition of new proposed Tier 5 service areas for spectrum licensing. SaskTel has considered the benefits and drawbacks of both options for use in urban, rural, and remote rural and northern areas of the country.
45. SaskTel prefers the use of Option 1 that uses Census sub-divisions (CSDs) as defined by Statistics Canada as the basis for the new Tier 5 service areas. SaskTel agrees with the proposal in the Consultation that all CSDs would be considered as Tier 5 service area. SaskTel does however suggest that CSDs smaller than 2 square kilometres in size not become a Tier 5 service area, but instead be amalgamated into the adjacent or surrounding CSD. This will exclude very small towns and villages by their inclusion into larger CSDs, however, it will reduce the administrative burden on the Department.
46. SaskTel believes that the flexibility and granularity offered by the use of CSDs will encourage the deployment of wireless services in rural areas by allowing smaller wireless service providers the ability to cost-effectively acquire Tier 5 spectrum licences that better match their proposed markets and coverage areas, and best suit their business needs. This reduction in spectrum acquisition costs for wireless service providers will benefit Canadians in rural areas by allowing and encouraging the further expansion of rural wireless services.
47. SaskTel thanks the Department for allowing the opportunity to provide input into this consultation that promises to be beneficial for rural wireless service providers. It is our hope that our comments will provide the Department with a fuller view of the issues identified in the Consultation and provide input and guidance for the Department's decisions and plans regarding future Tier 5 service areas.