

February 25, 2011
Government of Alberta – Rural Broadband
Response to

Canada Gazette Notice SMSE-018-10
Consultation on a Policy and Technical Framework for the 700 MHz Band and
Aspects Related to Commercial Mobile Spectrum

Executive Summary

The Alberta government has long envisioned a province where Albertans, regardless of where they live, are able to gain access to improved educational, medical, business, and other services to build strong and vibrant communities.

In 2005, with the completion of the Alberta SuperNet, the government realized a large part of that vision by enabling a high-speed communications backbone to support electronic commerce, provide access to government services in lifelong learning, health, recreation, and business. The SuperNet is a province wide network consisting of 12,000 km fibre optic cable and 1,814 km microwave facilities interconnecting 429 communities, consisting of 27 urban areas and 402 rural communities. This network connects approximately 4,200 provincial and municipal service locations consisting of learning establishments, government offices, health centres, libraries, municipal offices and dozens of internet service providers in over 260 communities.

The Alberta government recognizes that for many Albertans, access to Broadband Services is seen to be an essential service, like access to water or power. The ability to do business in the global economy; communicate digitally; collaborate globally; access goods and services electronically; transact day to day business over the Internet; and access an ever increasing range of electronic government services, is key to sustaining and building Alberta.

For rural Alberta, Broadband Services are increasingly becoming a critical foundational element for economic development. The Alberta SuperNet began the vision, but further work is needed to ensure that rural Albertans can take advantage of the digital age. The Final Mile Broadband Initiative was instigated to see that work completed.

Expanding the availability of Broadband Services will bring the world to Alberta's doorstep. Whether it's selling products or services through a digital storefront, moving oil and gas data from the field to the analysis centre more effectively, boosting the agriculture supply chain by marketing, selling and purchasing grains, hay or feed online while producers continue with harvest, or videoconferencing with new clients in the European community, the Final Mile Broadband Initiative seeks to complete the vision of empowering private enterprise and government alike.

The Final Mile Broadband Initiative will continue to uphold certain guiding principles:

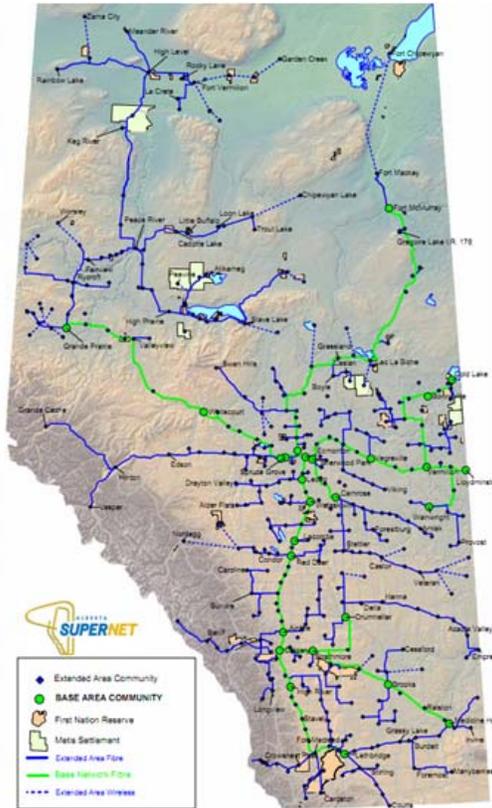
- Support and promote rural development in Alberta.
Many rural Albertans continue to face a disadvantage in a growing knowledge economy as necessary Broadband Services either don't exist, or rural rates for accessing these services remain prohibitive.

- Enhance access and delivery of government services to Albertans. Government service delivery is limited by its ability to reach all constituents. The Final Mile Initiative will work to ensure that more Albertans have access to government services and programs.
- Leverage ongoing innovation. Incorporate and leverage existing projects, programs, and innovation already underway across Alberta.
- Create a sustainable model. Ensure that models proposed for implementing the Final Mile Broadband Initiative are sustainable from a financial, business, service and operational perspective.
- Commitment to open and equal participation. Utilize existing infrastructure where available; leverage investments made by the private and public sectors where feasible; and ensure that no company receives preferential treatment, pricing or access, without fair process.

As a result of the Final Mile Broadband Initiative, universal access to Broadband Services will enable educators, health care workers, librarians, and business owners to share and move information quickly and effectively throughout the province: a teacher in Edson can connect online with a colleague in Manyberries to create an exciting interactive class project, doctors in Rocky Mountain House can videoconference with the Foothills Poison Control Centre in Calgary to treat a patient locally, a student in Two Hills can explore the University of Alberta's online collections to access research for reports and position papers, an outpost nurse serving northern communities can access online medical research and training opportunities to better serve local patients, and a business owner in Oyen can easily conduct transactions overseas and market products globally to successfully expand their enterprise.

The Final Mile Broadband Initiative aims to provide Albertans, regardless of where they live, the ability to access the electronic services they need to sustain and build Alberta.

Technological solutions particularly wireless are and will continue to play an instrumental role in delivery of broadband solutions to rural and remotely located Albertans. The Ministry of Service Alberta, Government of Alberta has reviewed SMSE-108-10 with specific regard to commenting on areas of commercial broadband services and their impact on rural broadband solutions, heretofore referred to as the Government of Alberta – Rural Broadband Response (GOA-RBB). This response will complement a response by the Government of Alberta – Public Safety being prepared by the Ministries of Municipal Affairs and Solicitor General and Public Security.



The GOA-RBB response is requesting that the 1st priority for allocation of 700MHz is to meet public safety requirements and supports all comments in the GOA-Public Safety response.

With respect to rural broadband, the GOA-RBB is requesting that at least 12 MHz of licensed spectrum in the 700 MHz band be allocated for Rural and Remote Broadband services in Alberta. This submission is responding specifically to rural broadband requirements in Alberta and the need for access to the 700 MHz spectrum.

In summary, a model for enabling access to the 700 MHz spectrum that enhances and promotes competition is in the best interests of rural Alberta.

We have provided comments (where appropriate)

Response to Section 4 (Commercial Mobile Services)

4-1 What is the general need for additional commercial mobile spectrum at this time and what do you anticipate the future needs to be?

Spectrum is required for rural and remote communities that are un-served or underserved by existing commercial operators. Wireless systems (point to multipoint) are ideal for many of these deployment opportunities. Previous broadband funding mechanisms (either Provincial or Federal) have not been coordinated with spectrum licensing, leaving many “final mile” connections non-existent, or difficult to achieve economically.

Current spectrum holders (in other bands) are often reluctant to sell their (unused) spectrum to rural internet service providers (ISPs), preferring to keep the license in the event that its value increases.

Response to section 5 (700 MHz Band Plan Issues and Considerations)

5-1 Based on the criteria listed above, which of the four band plan options should be adopted in Canada? Why is this option preferred over the other options? If Option 3 (APT band plan) is selected, what should the block sizes be?

In providing your responses, include supporting arguments, including potential benefits to wireless subscribers.

The GOA-RBB agrees with the Department view on the criteria that, it is important to have a band plan enabling “harmonization of equipment specifications to the extent possible, enabling economies of scale and greater equipment availability for consumer and infrastructure equipment”, and “cross-border frequency coordination”.

This also means that a unique Canadian band plan is absolutely undesirable for Canadian operators and consumers; hence the recommended approach is to follow the US Band Plan “Option 1”. This will result in many economies of scale. The ideal band option is to consider putting in national roaming rules that ensure that all bandwidth owners in the 700 MHz range can obtain devices that have a national coverage option and potentially still take part in the “economies of scale” device solutions.

5-2 The band plans presented in the options above include guard bands. Should the Department auction the guard bands, or should these frequencies be held in reserve for future use such that they are technically compatible with services in the adjacent bands?

The GOA-RBB believes that guard bands be used only as required by public safety bands (refer to GOA-Public Safety for further comment). Otherwise no frequencies should be held in reserve; rather any guard bands should be included within the license allocation, using the “band edge” masks to provide compatibility between license holders.

5-3 Do public safety agencies need spectrum for broadband applications? If so:
(a) How much and for which type of applications?
(b) What are the anticipated deployment plans and the possible constraints, if any, in implementing these plans?
(c) Is there suitable alternate spectrum to the 700 MHz to meet these broadband requirements?

Refer to GOA-Public Safety comments.

5-4 Comments are sought on the need for public safety broadband radio systems to be interoperable:
(a) between various Canadian public safety agencies;
(b) between Canadian and U.S. public safety agencies.

Refer to GOA-Public Safety comments.

5-5 What are the challenges faced today by public safety agencies to have cross-border radio interoperability in other frequency bands?

Refer to GOA-Public Safety comments.

5-6 Notwithstanding your responses to questions 5-3 to 5-5, the Department seeks comments on whether public safety broadband needs can be met by using commercial systems with priority access rights for public safety, at commercial rates.

(a) Your views and comments are invited on priority access rights, including pre-emption, and on the feasibility of such a system.

(b) What public safety technical and operational requirements cannot be met by commercial systems, from either a public safety or commercial operator point of view?

(c) What specific rules, if any, should be mandated by the Department to make such a system viable?

Refer to GOA-Public Safety comments.

5-7 Comments are sought on the need for regional (local, provincial, etc.) dedicated broadband networks to provide access to all public safety agencies, and the institutional²³ feasibility of implementing such a system.

²³ Governance, licensing structure, financing, technical and operational, etc.

Refer to GOA-Public Safety comments.

5-8 Is there a need for a dedicated national interoperability broadband network to provide access to all public safety agencies? The Department seeks comments on the institutional feasibility of implementing such a system.

Refer to GOA-Public Safety comments.

5-9 If band plan Option 1, 2a, or 2b in Section 5.1 is chosen, which one of the three options described above should be adopted and why is this option preferred over the other options? Provide supporting rationale.

Refer to GOA-Public Safety comments.

5-10 If commercial operators are mandated to support public safety services, what tier size should be applied in order to ensure adequate public safety coverage?

Refer to GOA-Public Safety comments.

5-11 If the APT band plan (See Option 3 in Section 5.1) is adopted:

(a) Given that the APT band plan requires a 55 MHz duplexing separation, can Canadian public safety services operate their current narrowband systems in this band plan configuration? If not, what are the possible alternatives to address public safety needs?

(b) Should spectrum be designated for dedicated public safety broadband systems, and how much?

The GOA-RBB recommends against the APT band plan. It is important to stay harmonized with the solutions applied in the US.

5-12 The Department seeks comments on whether the auction of 700 MHz commercial spectrum should be based on uniform tier sizes across all spectrum blocks, or a mixture of tier sizes.

The GOA-RBB has no preference on tier sizes other than to recommend that at least 12 MHz of the 700 MHz band be allocated for rural and remote services.

5-13 Based on your answer above, what tier size(s) should be adopted?

No comment.

5-14 The Department seeks comments on the transition policy proposed above.

No comment.

5-15 The Department seeks comments regarding its proposal to permit low-power licensed devices, including wireless microphones, to operate in the band 698-764 MHz and 776-794 MHz only until March 31, 2012.

No comment.

Response to section 6 (Changes to Canadian Table of Frequency Allocations)

6-1 The Department seeks comments on its proposed changes to the *Canadian Table of Frequency Allocations* for the band 698-806 MHz.

No comment.

6-2 The Department seeks comments on the spectrum utilization policy proposed above.

No comment.

Response to section 7 (Promoting Competition)

7-1. The Department seeks comments on the current state of competition and its anticipated evolution, including the impact on consumers in the Canadian wireless services market:

- (a) in general;
- (b) in terms of its contributions and interaction to the broader Canadian telecommunications service market;
- (c) in comparison with the wireless markets of other jurisdictions.

The GOA-RBB would like to illustrate the fact that after many years of promoting rural and remote broadband services by Provincial and Federal Government programs, the “digital divide” in many of these areas is still evident and continues to be a concern. This is due to the simple fact that commercial operators in this capital intensive industry have better opportunities in more populated areas. Competition in rural and remote areas has not fully developed. Hence our recommendation for a Tier 2, province wide, 12 MHz license for remote and rural broadband for the Province of Alberta.

7-2. Provide views, and any supporting evidence, on the impacts of government measures adopted in the AWS auctions, including the impacts on consumers and on the state of competition. In particular, what has been the impact, if any, of such measures on industry concentration, barriers to entry or expansion of services, and the availability of new or improved service offerings and pricing plans?

While greater competition has been introduced for consumers in urban areas, the new entrants from the 2008 auction have had no significant impact on rural and remote service areas.

7-3. In light of the current conditions in the Canadian wireless service market(s), is there a need for specific measures in the 700 MHz and/or 2500 MHz auction to increase or sustain competition?

Competition to provide services to rural and remote communities would be preferable. It is important that specific measures are in place to nurture competition to provide for “final mile” connectivity in rural Alberta.

7-4. The Government of Canada has undertaken a consultation on potential changes to the foreign investment restrictions³² that apply to the telecommunications sector. How would the adoption of any of these proposed changes impact your responses to the questions above?

No comment.

7-5. If the Department determines that there is a need for measures to promote competition, which of the above mechanisms would be most appropriate and why should this mechanism be considered over the other? Comments should also indicate if further restrictions should apply so that policy objectives are met, for example, over a given time period?

In light of your response above, and recognizing that pending decisions on the specific band plan, spectrum for public safety system, tier sizes and open access requirements could influence your response:

The position of the GOA-RBB is that wireless spectrum for rural and remote areas should be licensed, rather than auctioned along with spectrum for urban areas.

7-6. (a) If the Department were to implement spectrum aggregation limits (caps):

- (i) Should the cap apply to the 700 MHz band only or be broader?
- (ii) What should the size of the cap be?
- (iii) Should bidders and their affiliates or associates share the cap?
- (iv) How long should the cap remain in effect?

(b) If the Department were to implement a set-aside in the 700 MHz auction:

- (i) Who should be entitled to bid in the set-aside block(s) and should the entitled bidders be restricted to bidding on the set-aside only?
- (ii) How much spectrum should be set-aside and which block(s) should be set-aside?
- (iii) If the set-aside were to include multiple blocks of spectrum, should they be contiguous?
- (iv) What restrictions should be put in place to ensure that policy objectives are met (for example, should trading of the set-aside spectrum be restricted for a given time period)?

The GOA-RBB recommends a “set aside” for a 12 MHz band in Alberta for “final mile” wireless connections.

7-7 . Are there other mechanisms that should be considered and, if so, how should these be applied?

No comment.

7-8 The Government of Canada has undertaken a consultation on potential changes to the foreign investment restrictions that apply to the telecommunications sector. How would the adoption of any of the proposed changes affect your responses to the questions above?

No comment.

Response to Section 8 (Promoting Service Deployment in Rural Areas)

8-1 In the above context, the Department seeks comments on challenges and specific problems affecting the deployment of broadband mobile services to low-density rural and remote areas.

As mentioned earlier, spectrum is required for rural and remote communities that are unserved or underserved by existing commercial operators. Wireless systems (point to multipoint) are ideal for many of these deployment opportunities. Previous broadband funding mechanisms (either Provincial or Federal) have not been coordinated with spectrum licensing, leaving many “final mile” connections non-existent, or difficult to achieve economically.

Current spectrum holders (in other bands) are often reluctant to sell their (unused) spectrum to rural internet service providers (ISPs), preferring to keep the license in the event that its value increases.

Hence the GOA-RBB is recommending a 12 MHz province wide (Tier 2) spectrum allocation at 700 MHz be reserved for “final mile” wireless connections.

This spectrum could later be subdivided to meet “final mile” business requirements.

8-2. Is there a need for further regulatory measures or changes to existing regulatory rules (e.g. RP-19) to facilitate service deployments in rural and remote areas that remain unserved and/or underserved?

Absolutely, the GOA-RBB suggests that a mechanism similar to that in RP-19 be introduced into the 700 MHz and 2500 MHz bands. This will ensure better and earlier use of scarce spectrum resources.

8-3. Should the Department decide that measures are necessary, comments are sought on specific measures that could be adopted within the 700 MHz spectrum auction process to ensure further deployment of advanced mobile services in rural and remote areas (e.g. roll-out conditions, tier structure, etc.).

The GOA-RBB believes that the 700 MHz band provides a special opportunity for remote and rural area coverage due to its favourable propagation characteristics. Our suggestion for Alberta, is that a Tier 2 license of 12 MHz be reserved, and later subdivided and licensed for “final mile” projects.

Other provinces may have different requirements.

Response to section 9 (Open Access)

9-1 The Department seeks comments on whether there is a need for government intervention to promote open access, by increasing access by users to handsets and/or applications.

In general the GOA-RBB believes that Open Access requirements are of benefit to end users (subject to technical interoperability between networks).

Since it is likely that the 700 MHz and 2500 MHz bands will largely be populated with devices based on LTE technology, Open Access would be feasible between all commercial mobile bands.

9-2. If government intervention is needed, which of the following options should be implemented?

Option 1: Mandated open access requirements across all future commercial mobile bands

Option 2: Mandated open access requirements for the entire commercial mobile spectrum in the 700 MHz band.

Option 3: Mandated open access requirements for the "C Block" (746-757/776-787 MHz) as in the United States.

The GOA-RBB prefers Option 1.

We believe that open access will facilitate competition between all operators and thereby lower costs for services to consumers. This follows the model of having an open access Internet, where companies can provide services across all infrastructures that delivers Internet services. This facilitated the success of companies such as Facebook, Google, eBay, and many others.

Response to section 10 (Auction Timing)

10-1. The Department is considering three options to proceed with the 700 MHz and 2500 MHz bands auction processes:

Option 1: to conduct an auction for licences in the 700 MHz band first, followed by an auction for licences in the 2500 MHz band approximately one year later;

Option 2: to conduct an auction for licences in the 2500 MHz band first, followed by an auction for licences in the 700 MHz band approximately one year later;

Option 3: to conduct one combined auction for licences in both the 700 MHz and 2500 MHz bands, which would be six months later than the first auction in the case of separate auctions.

The GOA-RBB is interested in the availability of Tier 2 license for 12 MHz in the 700 MHz band. This spectrum should be reserved (not auctioned) for provincial “final mile” users. These licenses should be made available at the earliest opportunity.