SaskTel Reply Comments:

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

April 6, 2011
1.0 EXECUTIVE SUMMARY

ES1. SaskTel has long believed that the ability to deliver wireless broadband is a very important tool in achieving the company’s mandate to provide leading-edge telecommunications to rural and remote residents. In this submission, SaskTel will focus on the attributes and advantages of adding 700 MHz spectrum to its repertoire of tools. This should not be interpreted that adding 700 MHz will solve all of the broadband problems in rural and remote regions. Other delivery technologies such as DSL and satellite will also continue to play an important part in SaskTel's future plans.

ES2. Within that context, the following represents SaskTel’s submission in response to Gazette Notice SMSE-018-10 consulting on the policy and technical framework for the 700 MHz band auction, including aspects related to Commercial Mobile spectrum.

ES3. In reviewing various Comments submitted in this consultation process, SaskTel notes a recurring theme advanced by new entrants - that existing providers should be restricted from access to this resource and that new entrants should be given full access. These types of academic competition policy arguments have been formulated within the precepts of an urban environment and cannot be applied to all geographical areas of Canada. The competition concerns raised in these submissions are almost entirely absent in predominantly rural areas such as Saskatchewan. In addition, solutions proposed for high density urban markets can and, in many cases will, impair the progress of service delivery in rural and remote areas.

ES4. As the cellular facilities network provider for the majority of rural Saskatchewan, SaskTel wishes to stress the importance of ensuring that this valuable public resource is actually used, in order to ensure that residents living in remote locations are able to participate in the social and economic aspects of the digital economy. Absent adequate spectrum that is able to span the vast distances of low density rural areas, many Saskatchewan residents will experience the real
impacts of the ‘digital divide’. Addressing this digital divide is especially important in Saskatchewan, where the CRTC classifies some 42% of residents as rural and remote. Creating competition policies which do not account for these market parameters and the needs of these Canadians would be unjust. In a country as diverse as Canada one size does not fit all.

ES5. In rural and remote areas competition in mobile broadband will not be based on the traditional concept of facilities-based competition but rather on vigorous competition for services delivered over one infrastructure. Multiple infrastructures cannot be supported in low density population areas. SaskTel has recognized this basic market concept. Accordingly it has built a robust infrastructure and reached agreements with other service providers so that wholesale service revenues can be used in addition to retail revenues to offset the cost of that infrastructure. This provides residents with a stable delivery platform and most importantly with choice.

ES6. In most rural areas, and in particular Saskatchewan, new entrants or even established players such as Rogers or TELUS will not build competing infrastructures in the foreseeable future. To place all 700 MHz spectrum for Saskatchewan in the hands of new entrants is to ensure that the bulk of this resource will remain unused for more than the next decade. Barring companies such as SaskTel or MTS Allstream from acquiring spectrum and making them less efficient would actually harm rural consumers.

ES7. Saskatchewan residents should not be forced to wait for services until these new companies have the surplus capital to consider building in low density areas.

ES8. SaskTel again urges Industry Canada to create strong incentives for companies purchasing spectrum to actually use that spectrum for the benefit of Canadians – allowing all Canadians to have access to mobile broadband on the same basis, regardless of where they may live.

ES9. To reiterate, SaskTel suggests rules which:

- Ensure that licensees use the spectrum they own within five years of purchase;
• Encourage licensees to serve both rural as well as urban population centres through either increasing service coverage requirements to as high as 90% for the C block or making changes in Tier configurations to reflect the difference between rural and urban areas; and

• Recognize the economic and social realities of various regions of Canada most specifically between high density urban areas and rural areas

ES10. The argument that somehow or for some reason smaller regional service providers like SaskTel or MTS Allstream are hoarding spectrum are absurd. SaskTel is using, or has plans to use, the entire range of spectrum it currently possesses. Still, many rural residents do not have access to the myriad of wireline or wireless broadband technologies open to their urban counterparts. These rural residents are hungry for bandwidth and hungry for bandwidth now.

ES11. SaskTel is committed to using all of the resources at its disposal to ensure that our rural residents have access to the service they demand.
This document has been developed by SaskTel and has been submitted to Industry Canada as part of the consultation process on Gazette Notice SMSE-018-10 regarding the Policy and Technical Framework for the 700 MHz band and Aspects Related to Commercial Mobile Spectrum. The document is to remain in its entirety and at all times the property of SaskTel.
2.0 INTRODUCTION

1. Saskatchewan Telecommunications ("SaskTel" or “the Company”) is pleased to submit its Reply Comments in response to Gazette Notice SMSE-018-10 “Consultation on a Policy and Technical Framework for the 700 MHz Band and Aspects Related to Commercial Mobile Spectrum”, dated November 30, 2010 (“the Consultation”).

2. SaskTel commends Industry Canada (“the Department”) for launching this consultation, studying the best manner in which to make additional wireless spectrum available to the telecommunications industry at this crucial time. SaskTel further commends the Department for providing an opportunity for the industry to submit Reply Comments on the complex issues involved with the assignment of 700 MHz spectrum and the implementation of a band plan for this spectrum. SaskTel especially commends the Department for making every effort to enact policies and licensing for this spectrum that ensure the full deployment of wireless broadband networks in all rural areas in order to bridge the digital divide for rural Canadians.

3. SaskTel has read with interest the large volume of contributions to this consultation which have been posted by the Department. In SaskTel’s opinion, there is widespread agreement on a number of topics.

4. In particular, SaskTel notes the near-universal agreement that:
   - demands for spectrum are increasing rapidly and the general need for additional mobile spectrum is large;
   - some variant of the FCC band plan should be implemented;
   - guard bands should be maintained and should not be auctioned; and
   - there is no requirement for ‘open access’ conditions to be incorporated into spectrum regulation.

5. In the remainder of these Reply Comments, SaskTel will address only certain topics where there is less consensus and which are especially important to SaskTel and to the people of Saskatchewan. Failure to address any particular comment made
should not be construed as agreement or acquiescence with that comment on the part of SaskTel, where such agreement or acquiescence would be inconsistent with the interests of SaskTel.

6. SaskTel is mandated to provide telecommunications services to all residents of Saskatchewan. As part of this mandate, we are required to provide wireless broadband services to both urban and rural subscribers. Many of these rural residents are located in sparsely populated and isolated parts of the province, making it a great challenge to provide these services. The ability to provide wireless broadband is dependent on a combination of the magnitude of the spectrum available, the frequency of the spectrum available, and the distribution of towers. To make meaningful inroads into providing service over the 650,000 square kilometres of Saskatchewan there is a need for both a high number of towers and access to significant spectrum resources. SaskTel is currently the only service provider whose network supports wireless services offered by SaskTel and other competitors in deep rural Saskatchewan and expects to remain so. Access to 700 MHz spectrum is critical for SaskTel’s ability to expand coverage to more remote areas of the province and to improve the quality of access (for example, enhancing data speeds, especially in light of massive increases in demand) in areas that SaskTel already covers.

7. At the same time it has made substantial investments in its network build out to cover these remote high-cost areas, SaskTel has signed agreements with other wireless service providers (WSP’s) allowing them to offer competing wireless services to all residents covered by SaskTel’s network footprint. Given the high costs of providing wireless services in rural Saskatchewan, any business case which relies on a parallel and independent network build to cover this territory would not be compensatory.

8. In order to continue offering high quality service to Saskatchewan residents, SaskTel needs access to suitable spectrum that can provide the bandwidth for future growth and meet the ever-increasing demands of future data applications. The 700 MHz band is well suited for providing service in rural regions. Its propagation characteristics provide greater range compared to other wireless broadband spectrum. This results in fewer sites being required to cover a region, and therefore lower infrastructure costs as well as fewer public concerns with tower siting. SaskTel
sees access to 700 MHz spectrum as key to providing and upgrading wireless broadband services to the rural residents of Saskatchewan. As several large WSPs are making use of SaskTel’s network facilities and infrastructure, SaskTel’s acquisition of additional spectrum will help maintain competitive alternatives for these rural customers.
3.0 SaskTel does have a need for 700 MHz spectrum

9. Although, there is a strong consensus that additional spectrum is required for mobile voice and broadband applications, there is disagreement on which market players need this spectrum and the manner in which the Department should determine who is allowed to bid on this valuable resource.

10. In particular, a number of parties attempt to make a case that incumbents do not need additional spectrum and would only hoard it. Some spectrum-holding incumbents argue that they themselves need additional spectrum while other incumbents do not.

11. SaskTel would make two comments in regard to this plethora of arguments and positions.

12. Firstly, SaskTel notes that all parties making such arguments are really attempting to shape the conditions of the auction in such a manner that they themselves receive an amount of spectrum at the lowest price possible. While SaskTel obviously shares this goal for its own network, the company has sympathy for the Department’s predicament in having to sort out these many claims and allegations. SaskTel submits that the most appropriate way to do so, rather than attempt to pick winners and losers arbitrarily, is to construct an auction framework with the least number of bidder restrictions possible and to therefore let the various companies’ actions in an unfettered market be used to determine the appropriate spectrum allocation.

13. Secondly, SaskTel strongly objects to statements that SaskTel itself has too much spectrum and would hoard any 700 MHz spectrum acquired. As SaskTel described in its confidential annex to its 28 February Comments, the company has plans which will require the deployment of the spectrum it currently has licenses for. And SaskTel is in need of additional spectrum, especially in the 700 MHz band, due to the company’s need to introduce and evolve to more spectrally efficient LTE and LTE Advanced technologies to more efficiently provide capacity to meet the dramatic growth in data usage per customer, and the excellence of this band in providing service to rural customers to help them bridge the digital divide.
14. In his remarks delivered March 22, 2011 at CTIA Wireless 2011, FCC Chairman Genachowski reaffirmed that “analysts forecast a 35X increase in mobile broadband traffic over the next 5 years.”¹ SaskTel’s own network data measurements and forecasts confirm that a similar explosive growth in data demand is occurring on our network. SaskTel is making every effort to respond to this growth, including utilizing our available spectrum resources. However, simply using more spectrum will not be enough to meet the demand, hence the pressing need to utilize newer more spectrally efficient technologies such as LTE and LTE Advanced, along with MIMO enhancements to further increase network capacity.

15. Evolving the SaskTel network to LTE technology in rural areas to meet capacity demands will be particularly challenging, both from a business case perspective as well as a spectrum perspective if SaskTel does not have access to 700 MHz spectrum to allow for network transition and migration. SaskTel is currently utilizing all of its sub-1 GHz spectrum in the province. Without access to adequate 700 MHz spectrum, SaskTel will not be able to evolve the rural network to future LTE technology - thus meeting the growing data bandwidth needs of our rural customers - without causing serious and lengthy disruptions in service to our customers. Not only would such a transition not be a smooth one, it could not be accomplished until 2019. As noted before, broadband data usage for our rural customers is actually growing faster than urban customers because of the lack of access by many rural customers to wireline broadband alternatives. Our rural customers are actually more dependent on reliable mobile broadband services than their urban counterparts.

16. SaskTel does not believe that any company – and especially not SaskTel – would spend the large sums anticipated to acquire 700 MHz licenses, only to hoard that spectrum in an attempt to stymie competition. As FCC Chairman Julius Genachowski said on March 16, 2011 at a Mobile Futures Forum entitled Spectrum, Consumers and America’s Small Businesses

   The looming spectrum shortage is real – and it is the alleged hoarding that is illusory....

It is not hoarding if a company paid millions or billions of dollars for spectrum at auction and is complying with the FCC’s build-out rules.\(^2\)

17. SaskTel agrees with the approach taken by Chairman Genachowski in providing the opportunity for licence holders to manage their spectrum holdings to allow for network growth and expansion, and more importantly to allow for timely evolution to newer and more spectrally efficient technologies such as LTE and LTE Advanced, as long as implementation conditions of licence are met.

18. Ofcom, the spectrum regulator in the United Kingdom, also recognizes the importance of access to sub-1 GHz spectrum for incumbent service providers. In a consultation document on the assessment of proposals for the upcoming auction of 800 and 2600 MHz spectrum, Ofcom is proposing the imposition of spectrum caps.\(^3\) These spectrum caps still, however, provide incumbent holders of 900 MHz spectrum the ability to acquire up to 2 x 10 MHz of 800 MHz digital dividend spectrum being auctioned off. Also, the incumbent with the largest spectrum holdings (170 MHz) is still being allowed to acquire up to 2 x 20 MHz of digital dividend spectrum under the proposed spectrum caps. SaskTel asks the Department to provide flexibility for the incumbent licence holders to evolve their rural wireless broadband networks by allowing incumbent service providers to acquire 700 MHz spectrum, in a similar manner to Ofcom.

19. Should the Department continue to have concerns about potential spectrum hoarding, these concerns can be addressed by including stringent roll-out conditions, which some have referred to as ‘use it or lose it’ rules, in the conditions of license. These conditions should be such that rural customers are not left un-served because a company has bid on spectrum and rolled out service to urban areas with no intention of ever serving the rural customers also contained within the license area.

20. As will be discussed later in this document, SaskTel brings a unique perspective to this consultation. SaskTel already provides service to vast rural areas of the province

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\(^3\) Ofcom “Consultation on assessment of future mobile competition and proposals for the award of 800 MHz and 2.6 GHz spectrum and related issues”, released March 22, 2011, available at: http://stakeholders.ofcom.org.uk/binaries/consultations/combined-award/summary/combined-award.pdf
of Saskatchewan, and is striving to keep the residents of these areas from becoming even more disadvantaged due to the digital divide between them and their urban counterparts. Acquisition of 700 MHz spectrum is the ideal way for SaskTel to progress toward this goal.

21. Wireless has been increasingly touted as the solution to rural broadband access. In Saskatchewan, SaskTel had been using fixed 2500 MHz (MCS) wireless spectrum to provide fixed wireless broadband service to an area the size of the Province of Newfoundland. As Industry Canada is aware, as a result of changes in national spectrum policy, SaskTel will be required to reconfigure this fixed wireless network. This reconfiguration will consist of converting the majority of the existing customers to an alternate wireless broadband product and encouraging others to work with SaskTel’s satellite partner Barrett Xplore.

22. In converting these customers from the current fixed MCS system it would be short sighted and uneconomic to develop duplicative wireless systems or to provide systems which would provide less bandwidth than the shared 21 Mbps now provided by the 4G cellular system, and the higher bandwidths to be offered in the near future through 4G network upgrades.

23. In addition, SaskTel plans to continue increasing its 4G coverage beyond those areas currently covered by MCS. SaskTel is committed to this infrastructure build because no other company will make the capital investment needed to serve the very low-density population of these areas.

24. Accomplishing this task will be no mean feat for any company nor will it be inexpensive. This will require additional towers, fibre backhaul to those towers, commercial AC power to the site and sufficient spectrum below the 1 GHz range to extend both the reach from those towers and provide the bandwidth rural residents are demanding.

25. SaskTel has analysed areas in Southern Saskatchewan where there are significant holes in the coverage of the 4G network and where it must consider alternate methods of providing rural broadband. One of those locations is the town of Plato (population 100) which is located about 40 km from Eston. In that area there is a gap
of some 367.8 square kilometres with no broadband and very limited cellular coverage. This location is not atypical of many located in the 35 telephone exchanges located in Band E where network access service (NAS) densities average some 0.412 per square kilometre. Exchanges in the other rural bands (E and F) have similar population densities.

26. Plato and area is representative of much of Saskatchewan. The cities accounted for 52% of the province’s total population, occupied less than one percent of the total land mass and had a combined population density of 976.1 per kilometre in 2001. The remaining 474,209 inhabitants were distributed throughout the remaining 650,000 square kilometers of the province – the vast majority of which is assessed as being High-cost service areas by the CRTC.

27. Building a tower in a location such as Plato will cost approximately $500,000. This will include the estimated cost of $13,000 per kilometre for fibre backhaul connection needed to support a 4G cellular location.

28. The customers served by this $500,000 will be represented by the 310 cars a day which pass within the range of the site and under 200 people who live within the reach of the tower.

29. These are the realities of attempting to close the last mile of the broadband access gap between rural and urban areas and to reach the targets set by the Canadian government.

30. The low-density of the population begs the question of why SaskTel, which also holds a licence for some spectrum in the 850 MHz range; also needs access to a portion of the 700 MHz range. The answer is twofold:

- First and foremost rural residents are the highest data users on SaskTel's new 4G network. As each new 4G tower has been turned up rural users have almost immediately caused data congestion. These residents do not have access to wireline broadband, in many cases the 2500 MHz MCS service does not provide the coverage necessary to accommodate their needs to connect to the digital economy and the current data caps of satellite systems remain too low. There is substantial pent up demand for bandwidth in rural areas. Providing the soon to be
standard of 5 Mbps for broadband requires a combination of increased spectrum volume and towers. While SaskTel has plans to construct an additional 70 rural towers at a cost of $500,000 per tower, adding more and more towers in lieu of additional spectrum is not the answer. And for rural areas, the additional facilities added have to be towers – there are obviously no rooftop solutions available. Thus, there remains a need for more spectra with a maximum rural reach.

- Secondly, SaskTel is required to maintain multiple wireless systems in rural Saskatchewan. As the primary and almost sole facilities-based cellular provider in rural areas SaskTel is required to operate multiple network technologies in order to avoid significant customer disruption. SaskTel has shut down its analog cellular system but will be required to maintain its CDMA for some time. The CDMA system is overlapping the growth of 4G and 4G will overlap the introduction of LTE. Neither our Federal regulator, our roaming contracts with other companies in North America, nor our customers would allow us to shut these systems down prematurely. SaskTel will of course groom its available spectrum in a way to maximize the use of this scarce resource however each overlapping network technology places demands upon the overall volume of technology available.

31. SaskTel, like MTS Allstream (MTSA) has a growing demand for spectrum to serve its rural residents causing similarities in positions taken by these two companies to ensure that some spectrum remains available for rural applications.4

32. As opposed to some claims that SaskTel and other regional carriers are hoarding spectrum, SaskTel is using the spectrum resources available to it and needs more to satisfy the growing demands of the residents of this Province.

33. As the Seaboard Group demonstrates in its February 2011 report on the 700 MHz auction the spectral inventory of Bell-TELUS and Rogers dwarfs the spectral asset licences of any other carrier in Canada whereas the spectra of MTSA and SaskTel are solely provincial in compass.5 On the national scale, Bell and TELUS have

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4 MTS Allstream Comments paragraphs 49 and 50
5 Over the Rainbow: Thoughts on the Canadian 700 MHz Discussion, Seaboard Group, February 2011 page 10
pooled their respective spectrum holdings. SaskTel, even though it has agreements for Bell and TELUS to sell services utilizing portions of SaskTel’s infrastructure, has no such pooling agreement.

34. The pertinent factor to consider is not spectrum depth but whether that spectrum is being utilized within each service area. MTSA and SaskTel are using or are constructing networks to use the spectrum available to them within their respective provinces. For rural areas, the critical 850 MHz cellular band has already been fully deployed in rural areas, and as noted elsewhere in our Reply Comments the higher frequency bands are simply not suitable to meet the fragile business case for rural deployments. SaskTel and MTSA require access to 700 MHz spectrum to meet increasing capacity demands in rural areas, and to evolve the network to higher spectrally efficient technologies.

**4.0 SaskTel is not associated with any other potential auction participant**

35. Several submissions raised concerns regarding relationships between auction participants such as Bell and TELUS and suggested that they should be considered as associated entities in this auction, with only one entity allowed to bid and with their spectrum holdings combined should the Department implement a spectrum cap.

36. SaskTel wishes to make clear that, although the company has network use agreements with both Bell and TELUS, these agreements are independent commercial agreements. SaskTel is the sole owner and operator of our wireless network infrastructure in Saskatchewan and Bell and TELUS make use of our network under commercial arrangements. These arrangements are not exclusive and SaskTel is free to negotiate on commercial terms with any market players wishing to also make use of SaskTel’s network to offer service in the province.

37. Specific to the issue at hand, SaskTel notes that neither Bell nor TELUS has direct use of SaskTel’s spectrum apart from the wholesale services provided to them under the network use agreement. Most importantly, there is no spectrum-sharing arrangement and SaskTel has no access to the spectrum which either TELUS or Bell are licensed to operate on in Saskatchewan. Any decision, for spectrum cap or other
purposes, to amalgamate SaskTel’s spectrum holdings with spectrum to which it has no access would be wrong.

5.0 700 MHz spectrum is optimally suited to bridging the rural divide

5.1 New entrants will not serve rural areas

38. As SaskTel has described earlier in these Reply Comments, much of Saskatchewan is truly rural and therefore challenging to serve cost-effectively.

39. Due to the challenging territory noted above, there is not a viable business case for new entrants to enter the rural Saskatchewan market via use of their own facilities and spectrum. Over two years after the close of the AWS auction, none of the new entrants have even entered the urban Saskatchewan market with facilities-based competition, although we do expect them to do so eventually.

40. An example of the entry we do expect is provided in Mobilicity’s comment that the auctioning of 700 MHz spectrum will make it “much more feasible for new entrants to build rural and suburban areas”.

41. It is correct that lower bandwidth spectrum being radiated from a given tower will have a longer reach, allowing towers in a given city to reach some of the suburbs and perhaps even nearby farms. But this is not the area that SaskTel is talking about when we suggest there is a need to serve rural customers. SaskTel has no doubt that suburban customers will be served by multiple competitors. It is the small towns, villages, and farms spread throughout the deep rural areas of the province that SaskTel is concerned about.

42. Even Rogers, which has had province-wide spectrum since 1983 has not found the economic rationale to build out network to serve these most rural areas. Rogers has facilities along three major highway corridors and very little else. And the vast majority of that coverage is 2G only, with Rogers offering 3.5G coverage only in Regina and Saskatoon.

6 Mobilicity Comments – paragraph 6
43. If a large, successful company such as Rogers has not served the bulk of rural Saskatchewan in the over 27 years it has been in the wireless business, it seems highly unlikely that any new entrants will do so either.

44. Bell and TELUS have also decided that the economics do not justify building – and have reached agreements with SaskTel that enable them to compete with SaskTel in services offered, while providing those services using SaskTel’s network in the province. This means that they use SaskTel facilities and spectrum only, even though TELUS has significant spectrum resources in the province. The case for building, even with significant spectrum holdings, is simply not enticing.

45. Even if SaskTel were incorrect, and a new entrant did undertake building a network with the rural coverage of SaskTel, the company estimates that it would take five to ten years to construct. However, SaskTel reiterates its firm belief that this will not happen. Competitors have the opportunity to obtain wholesale access to SaskTel’s network years before they could build their own network and with much less capital expenditure. This assumes however, that SaskTel secures adequate bandwidth to support those who wish to wholesale. This is the only way that new entrants can enter targeted sections of the Saskatchewan market without affecting availability of wireless services in rural areas.

5.2 700 MHz spectrum is the only cost-effective way to reach rural customers

46. 700 MHz spectrum has a longer reach compared to higher frequency PCS, AWS, and BRS (2.5 GHz) spectrum bands, minimizing the number of required towers, and the related quantities of radio site equipment, as well as reducing the cost of installing fibre based backhaul facilities to serve each tower location, which is very expensive.

47. As noted by CIBC World Markets in a February 1, 2011 wireless industry update,

The 700 MHz band is more desirable than higher-frequency bands due to its better propagating characteristics. Given constant power output, radio signals at 700 MHz travel about twice as far as signals in the 1.9 GHz PCS or the 2.1 GHz band. Because of this, fewer cell sites are required to cover a particular area, making it more cost effective for operators, including entrants, to build networks. With adequate coverage being so key to the success of wireless carriers, particularly in a country like Canada with such low population density outside the metropolitan areas, the excitement around the 700 MHz band is justified.
48. The figures below illustrate, for one sample tower, the coverage advantage provided by the use of 700 MHz spectrum (figure 2) in a rural location rather than the use of higher frequency AWS spectrum (figure 1).

Figure 1 – Predicted 4G rural network coverage using AWS spectrum. Outdoor coverage is provided in 5.4% of the selected rural region
Figure 2 – Predicted 4G rural network coverage using 700 MHz spectrum. Outdoor coverage is provided in 41.6% of the selected rural region, an almost 8 fold increase compared to the coverage possible using AWS spectrum.

49. Some may argue that such expanded coverage can be achieved through the deployment of additional towers using higher frequency spectrum.

50. This is correct. However, even for SaskTel, a provincial crown corporation with a mandate to serve the province, there is no compelling business case to build the large number of additional towers that would be required to cover our rural residents with high-frequency spectrum.

51. As previously submitted to the Department, SaskTel plans to utilize both the 700 and 850 MHz cellular band to effectively provide a high quality wireless broadband service to our rural customers, and provide a cost effective approach to evolve the network to more spectrally efficient LTE technology for long term gains in capacity. SaskTel is currently using our 850 MHz spectrum for our existing CDMA network, as well as to
meet the immediate needs of our rural customers for wireless broadband service with HSPA technology, a stepping stone to LTE. SaskTel plans to utilize 700 MHz spectrum acquired in the auction to deploy an LTE network overlay covering our entire rural service area. This would then allow for a smooth transition of our customers from the CDMA and HSPA networks to newer and more efficient LTE technology. The use of MIMO technology on the LTE network can also increase performance and throughput for customers on the fringe of our coverage areas, further increasing the number of residents that can be served, and improving the experience for these rural customers. Over the long term, all of the HSPA and CDMA networks will be replaced with LTE, and LTE Advanced where and when appropriate.

52. Without access to 700 MHz spectrum, the transition from CDMA and HSPA networks to LTE networks (along with the coverage, throughput and performance advantages provided by MIMO technology) will be very disruptive for our customers. The transition cannot be done smoothly using 850 MHz spectrum alone.

53. The Government of Canada has, over the past decade, developed numerous policy papers and programs designed to ensure that rural and remote residents have better access to broadband. These policies normally translated into one time funding programs which did not result in the sustainable growth of broadband in rural areas. The timing and the targeting of these one-time capital programs did not build a framework that enables companies to plan, to replace, or to maintain a leading edge infrastructure on an ongoing basis. These programs were based on the misplaced preconception that rural areas can support either a facilities-based competitive environment or small (less than 500 people) communities can develop their own broadband services.

54. These preconceptions resulted in excessive costs, short lived broadband services and a growing number of underserved rural residents. This extended period of time where rural residents have been excluded from participating in broadband initiatives has resulted in extensive pent up demand in Saskatchewan. SaskTel also notes that other companies such as MTSA have also provided evidence of the hunger of rural
customers to access broadband applications via mobile solutions. MTSA provides evidence that rural customers use, on average, twice the data of urban customers\(^7\).

55. This hunger for more and more data means that SaskTel must obtain more low-frequency spectrum to reach these customers.

56. SaskTel believes that any sustainable initiative to support rural residents must be built on or extend existing telecommunications infrastructure. The nature of the rural market is that its customer base cannot support multiple viable delivery networks. Building on or extending the capability of existing networks will avoid duplication, reduce costs and result in a sustainable service if for no other reason than the existing network provider has already proven their ability to be successful.

57. The Government of Canada now has an historic opportunity to ensure that operators with a viable network have an opportunity to expand their services to rural and remote residents. At least a portion of the 700 MHz spectrum must find itself in the hands of existing carriers with the facilities able to meet the growing needs of rural and remote areas of Canada.

5.3 **Aggressive build-out requirements are required to ensure rural coverage**

58. A number of submissions in the consultation suggest ways in which the Department can ensure that rural customers are served.

59. For example, TELUS suggests a build-out requirement covering 50% of residents in each tier three area (regardless of the size of the tier) within three years. SaskTel believes that a three year build-out target is promising, but that the requirement of only 50% coverage would not serve rural customers well. For instance, in Saskatchewan, 50% coverage could be achieved by merely serving the CMAs of Regina, and Saskatoon\(^8\) and either Moose Jaw or Prince Albert, or a collection of smaller cities. In no way does this guarantee rural coverage.

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\(^7\) MTSA Comments paragraph ES5
\(^8\) Statistics Canada estimates the 2010 population of the CMAs of Regina and Saskatoon at 215.1 K and 265.3K out of a total provincial population of 1045.6K
60. TBay Tel also suggests a build-out requirement covering 50% of the population but also 50% of highways. SaskTel is unclear how ‘highways’ would be defined for such a requirement and believes that these stipulations could also leave many rural customers without coverage. For instance, at present Rogers covers the major highways of Saskatchewan and the major cities (and only Regina and Saskatoon with speeds higher than 2G). One look at their coverage map can show large areas of rural Saskatchewan, including some areas less than an hour drive out of Regina, where there is no coverage.

61. MTSA suggests not including Census Metropolitan Areas in the calculation of rural build-out percentages. SaskTel believes that this approach has promise.

62. Others advocate some undefined ‘use it or lose it rule’ or the build-out requirements as were used for previous spectrum auctions such as the AWS auction. For the AWS spectrum auction, rollout requirements were set for each individual Tier 2 and Tier 3 service area. For Saskatchewan, the rollout requirements set for the AWS spectrum (40% of population for Regina and Saskatoon, 25% for the Moose Jaw Tier 3, and 40% for the Saskatchewan Tier 2) can easily be met by only serving Regina, Saskatoon and either Moose Jaw or Prince Albert. Clearly, as shown in the example for Saskatchewan, use of the AWS spectrum auction rollout requirements would not guarantee coverage for any rural customers.

63. SaskTel believes that the Department should investigate ways of segregating urban areas from truly rural areas for at least a block of the 700 MHz spectrum. However, the Department may find it less complex to adopt SaskTel’s suggestion of applying an aggressive, 90% coverage, build-out requirement to at least one block of the 700 MHz spectrum being auctioned. This allows service providers focused on serving rural areas the option of acquiring the block(s) with high build out requirements targeted to guarantee coverage to rural customers, while leaving other blocks for service providers focusing purely on serving urban areas.

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9 MTSA Comments ES16 e
5.4 Duplicate facilities are cost-prohibitive in rural areas – but competition in services can occur

64. As discussed above, there is no viable business case for multiple facilities-based wireless networks in the province. However, this does not mean that competition cannot flourish. A number of competitors to SaskTel are active in Saskatchewan. Rogers operates its own facilities in many urban areas and the highway corridors connecting them. In addition, with the exception of one company associated with an equipment manufacturer, there are a few smaller companies offering wireless broadband. Those companies using terrestrial wireless are generally locally based, without adequate backhaul facilities for larger bandwidth usage and have not proven to be sustainable over the long term. Rural residents are torn between using what is available compared to what is needed in terms of bandwidth and reliability.\(^{10}\)

65. More significantly, Bell Mobility, TELUS, and various MVNOs compete with SaskTel on services throughout our coverage area while relying to a greater or lesser extent on the facilities and spectrum owned by SaskTel.

66. SaskTel’s facilities are thus used to allow both SaskTel and these competitors to offer service to rural customers over the area depicted below, in a figure showing SaskTel’s projected 2011 4G coverage area. SaskTel notes that having this area covered by facilities and some spectrum does not ensure acceptable broadband service for rural customers. Only by having adequate spectrum delivered via these facilities will those customers be well-served – either by SaskTel or by one of our competitors.

67. It is SaskTel’s belief that the only way to sustain mobile wireless voice and broadband data competition in most rural areas of the province is through companies using the same rural network to reach potential customers, but then competing vigorously on the service level.

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\(^{10}\) Industry Canada, through various programs has provided direct funding to various rural broadband initiatives. The only services which have survived are those initiatives with SaskTel involvement. Low margins due to population density, limited technical expertise, and the inability to replace or maintain the systems have generally led to their collapse.
68. SaskTel welcomes this competition and invites others wishing to compete in the province to discuss commercial terms with us.

Figure 3: SaskTel projected 4G coverage – December 2011
5.5 In Saskatchewan, restricting SaskTel from bidding, combined with a lack of aggressive build-out requirements, would ensure that spectrum in rural areas remains unused

69. As SaskTel has demonstrated above, services delivered via the company’s facilities and sub-1 GHz spectrum, whether offered by SaskTel or by a competitor, are the only mobile wireless voice and broadband services that can reach a wide swath of rural Saskatchewan residents – thus addressing the digital divide.

70. Auction measures put in place to restrict the ability of incumbents to acquire spectrum should not be used to preclude SaskTel from acquiring any of the 700 MHz spectrum.

71. If measures such as spectrum caps and set-asides do have this impact on SaskTel, they will impact not only SaskTel, but all competitors also using SaskTel’s network and spectrum. In addition, if SaskTel and those competitors using our facilities are not able to access additional spectrum, all rural customers in Saskatchewan will be disadvantaged and the rural divide will deepen. No other spectrum winners are expected to deploy in rural areas.

72. SaskTel strongly recommends that such measures not be applied. If they are, such measures will only deepen the digital divide in rural Saskatchewan and will not contribute to an increase in competition. At a minimum, a build-out requirement, such as recommended by SaskTel, is attached to a portion of the spectrum to ensure that this unfortunate result does not come to pass.

73. However, if the Department should feel that a set-aside is required, then SaskTel would agree with the position of MTSA that:

Relative access to capital remains as a relevant criterion for market entry and particularly for wireless markets for which market entry is dictated by performance in a public auction process. A spectrum set-aside recognises the importance of this barrier to entry and effectively remedies against this. Given that this remains a relevant criterion and that the relative sizes and relative ability to garner capital remains unchanged, the new entrant set-aside and definition of new entrant to include smaller regional players, per the AWS spectrum auction rules, remain entirely appropriate.11

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11 MTSA Comments, paragraph 94
6.0  Spectrum should be allocated to Broadband Public Safety purposes

74. Many public safety groups have made compelling cases for the need for a set-aside of some of the 700 MHz for a public safety broadband network. These groups have made a long and comprehensive list of possible uses for this technology in their area of responsibility. Most of these applications are desired or being developed today.

75. It is SaskTel’s belief that the public safety groups have made compelling cases for the need for a set-aside of some of the 700 MHz.

76. SaskTel agrees with the RCMP that the 700 MHz spectrum should be owned by the public safety community and not a commercial operator. 12

77. SaskTel also agrees that spectrum allocated to public safety should not be subject to auction. Instead, this spectrum should be licensed to individual provinces before 2012. This would provide provinces with the basis to begin their individual planning in meeting the next stage of their communications needs.

78. SaskTel believes it is appropriate that public safety spectrum should be licensed to each individual province, given that the provinces pay 70% or more of the cost of policing and health services. In order to ensure interoperability, the licences should not be controlled by any given public sector entity or municipality. Providing a centralized control and management of the spectrum by the province ensures interoperability will be achieved amongst all agencies, and the network will be designed, installed, and operated in a consistent manner in all areas.

79. The Province should then be given the flexibility to meet their individual public safety needs in the most fiscally responsible manner available to them. The RCMP has indicated that it is feasible to create regional networks and to coordinate interoperability. 13 SaskTel disagrees that these regional networks must be separate and apart from commercial operations. Even the RCMP recognize “in the present

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12 RCMP Comments, page 12, paragraph 5.6.2 (b)
13 RCMP Comments, page 13, paragraphs 5.7.2 and 5.7.3
economic conditions, private-public partnerships may be the most pragmatic approach” 14

80. SaskTel supports the private-public partnership vision outlined by the Province of Ontario when it stated:

“the Province envisions an innovative build out on the allocated bandwidth that will require the participation of commercial partners. It is highly probable that many different commercial partners will be utilized by various provinces and territories in the creation of a system of systems that utilizes this broadband super highway across Canada.” 15

81. In addition, as per SaskTel’s initial Comments on the 700 MHz consultation SaskTel does not believe that the Department would be required to put in regulations to govern the business arrangements between the commercial operators and the public safety agencies. If public safety users were given flexibility in the use of spectrum they would have an attractive negotiating tool to achieve their goals with commercial operators. The Province would be able to negotiate service level agreements with commercial network operators which could meet their needs creating a true private-public sector partnership.

82. The goals of the public safety operators would seem to be:

- Ownership of spectrum
- Interoperability
- Pre-emption/priority rights during incidents
- Adequate capacity during times of crisis
- The need for implementation of mobile broadband systems to begin in a 2 to 5 year time frame.

83. The new LTE technologies already being scheduled for implementation by commercial operations can accommodate these needs and within the time frames asked for by the public safety sector. Partnerships with commercial networks will provide the public safety sector with a combination of wide area coverage, reasonable recurring cost and interoperability across Canada.

14 RCMP Comments, page 13, paragraph 5.8.2
15 Province of Ontario Comments, page 2, number 4.4
84. In summary, SaskTel recommends that the Department provide the individual provinces with a flexible public safety licence and allow provinces to develop the private/public sector partnerships necessary to deliver their mandate.

7.0 CONCLUSION

85. SaskTel is pleased to have had the opportunity to provide Reply Comments to the 700 MHz consultation. There are many complex issues and questions for the Department to consider regarding the future development of this spectrum, allowing the deployment of new and innovative broadband wireless services for Canadians, while protecting incumbent users such as SaskTel providing essential wireless broadband services primarily in rural areas of Saskatchewan.

86. SaskTel trusts that the comments provided in response to the consultation can provide the Department the advice and direction needed to establish policies that will see the 700 MHz spectrum developed to the maximum benefit of all Canadians.