

BORDER AREA COALITION
CANADIAN BORDER REGION 5 IMPACTS

The Consensus Parties' Supplement states that "[n]o current primary border area licensee will lose any channels due to realignment."¹ Under the proposal, however, the overall number of channels allocated for B/ILT licensees in the border area is significantly reduced, and the quality of the channels offered to B/ILT licensees under the proposal is also reduced. The Supplement notes that its "reallocation proposal is not based on the original allocations of spectrum, but on a licensee's current usage of spectrum taking into account years of intercategory sharing, etc." and encourages secondary use of Canadian channels.² This runs afoul of the original Consensus Plan's pledge that "existing proportionate...allocations...will be maintained."³ B/ILT licensees in the border areas should be provided proportionate spectrum in terms of both quantity and quality. The following is a discussion of these and other problems with the Supplement, including critical "double border" coordination problems and secondary use concerns, that render the Supplement unworkable for Canadian Border Region 5.

The Region 5 Proposal Results in an Inequitable Channel Redistribution

Region 5 incumbents are particularly disturbed by the Supplement's manipulation of channel allocations in the border areas. The numbers provided in the Supplement simply do not add up to a complete, effective, and fair solution. In Border Region 5, for example, the channel allocations currently, and under the Supplement, are as follows:

	Current Channels	Proposed Channels	Net Change
Public Safety	145	150	= 5 Gain
SMR	95	144 (Plus shared use of 66)	> 49 Gain
B/ILT	120	Shared Use of 66 ⁴	> 54 Loss

¹ See Supplement at iv.

² See *id.* at Appendix G-3.

³ See Reply Comments of the Private Wireless Coalition, Nextel, and Public Safety Organizations, *Improving Public Safety Communications in the 800 MHz Band*, WT Docket No. 02-55 at 16 (filed Aug. 7, 2002).

⁴ B/ILT incumbents would be limited to part of the 66 channels in the Mixed Use High Site Business/ILT/SMR band.

One wonders why Specialized Mobile Radio (SMRs) operators (*e.g.*, Nextel) are allocated more than 49 new channels versus Public Safety's five when the overriding purpose of this proceeding is to reduce Public Safety interference and provide additional spectrum for Public Safety communications where possible. Second, the Region 5 rebanding proposal calls for a reduction of B/ILT channels by at least 54 channels. Under the Supplement, B/ILT licensees would have access to only 1.65 MHz of contiguous spectrum (66 channels x 25 kHz per channel x 1 MHz per 1000 kHz = 1.65 MHz). Such a reduction is patently inequitable and is insufficient for current—let alone future—B/ILT operations.

For example, in the Puget Sound area, Boeing currently utilizes 50 of the 66 channels that would be available for B/ILT use under the Supplement. Two other Puget Sound area licensees utilize 41 and 16 channels, respectively. An unavoidable result of the Supplement's channel re-allocation scheme is that B/ILT expansion will not be feasible for the foreseeable future. By shoe-horning Region 5 incumbents into 1.65 MHz of spectrum without provision for any unused or additional channels, there is no room to expand existing systems, no room for new licensees, and no room to fix channel spacing related technical or interference problems. These problems are exacerbated by other provisions of the proposal prohibiting future B/ILT access to other channels.⁵

This "shell game" aspect of the proposal alone suggests that a primary motivation behind the Supplement for the border areas is the advancement of Nextel's business interests as opposed to the proper goal of reducing interference and increasing Public Safety spectrum allocations. The Commission should not endorse such a biased proposal.

The Channels Allocated to B/ILT Use In Region 5 Are Not of Comparable Quality to Those Currently Employed

In addition to the proposed reduction in overall channels available for B/ILT use in Border Region 5, the Supplement does not assign B/ILT spectrum of comparable quality to that currently available. Specifically, the channels assigned to B/ILT would not provide adequate spectrum for the required 250 kHz channel separation currently used on 800 MHz systems used by some Region 5 B/ILT licensees. To maintain 10-channel systems with Motorola's recommended 250 kHz channel spacing, a total of 2.5 MHz of B/ILT spectrum would be required.⁶ The Supplement provides B/ILT with only 1.65 MHz of spectrum in Border Region 5. One alternative that would enable B/ILT licensees to operate on the channel allocations proposed

⁵ For example, the Supplement proposes that only Public Safety licensees be able to access channels vacated by Nextel for a period of five years after NPSPAC relocations are complete. *See* Supplement at 12. The proposal also contemplates an open-ended freeze on most new B/ILT and SMR licensing and license modification applications on channels 121-400. *See id.* at 26.

⁶ *See* Celwave, Division of Radio Frequency Systems, Instruction Manual, T-JD800-4T (Serial No. 388739-001), 1007 E. University, Phoenix, Arizona 85034.

in the Supplement would involve purchasing extensive amounts of new equipment (such as transmitter combiners, tower space, and antennas), at a minimum, and may require building new sites to maintain existing coverage areas. Procurement of such new equipment alone would be expensive.

The Consensus Plan's Supplement Provides Inadequate Guard Bands

The Supplement does not contain adequate provisions for border area guard bands. In the heartland, the plan provides for 2 MHz of paired spectrum at 859-861/814-816 MHz for guard band protection.⁷ The plan also provides at least a .75 MHz guard band for the Mexican border areas.⁸ In contrast, the plan does not contain *any provisions whatsoever* for guard bands in any of the Canadian border regions.⁹ Inadequate or non-existent guard bands will lead to increased occurrences of harmful interference to Public Safety and B/ILT operations and renders the B/ILT spectrum allocation in areas like Region 5 disadvantaged with respect to the rest of the United States. While the primary purpose of this proceeding is to eliminate Public Safety interference in the 800 MHz band overall, the Commission should not tolerate specific provisions of the Supplement that have the real potential of dramatically *increasing* harmful interference to border area incumbents.

The Consensus Parties' Supplement Creates "Double Border" Problems

The Supplement would create a new "double border" coordination problem for licensees in all border areas. Border Region 5 is no exception. For example, licensees in Border Region 5 would need to coordinate for both the Canadian border to Line A and from Line A to heartland America. More specifically, B/ILT users above Line A would be required to utilize the 66 contiguous channels at 862.25-863.9/817.25-818.9 MHz Mixed Use High Site Business/ILT/SMR band.¹⁰ Due to the reallocation of channel assignments below Line A to Low Site/Low Power SMR licensees, Border Region 5 B/ILT licensees above Line A will be forced to share channels with SMR licensees using the same channels just below Line A. Region 5 incumbents would, therefore, not have full access to the proposed 66 channels and, instead, would be forced to enter into additional coordination efforts with these non-B/ILT licensees. Beyond the additional coordination requirements, there is also the likelihood of additional harmful interference to B/ILT users from such cellularized uses directly below Line A.

⁷ See Supplement at 10.

⁸ See *id.* at Appendix G-1.

⁹ See *id.* at Appendix G-1 and G-2.

¹⁰ See *id.* at Appendix G-9.

Further, the B/ILT channels proposed for Border Region 5 and heartland America presents a serious problem for B/ILT licensees utilizing 800 MHz simulcast systems for operations both above and below Line A.¹¹ The Supplement would disrupt simulcast systems designed and coordinated to work seamlessly both above and below Line A. The proposal would effectively eliminate the ability to simulcast and increase the spectrum requirements for similar functionality.

The Supplement's Reliance on Secondary Use is Not Adequate

The Supplement notes that "secondary use of Canadian primary channels by United States licensees would continue to be permitted (and encouraged) in the Border Area."¹² Specific reference is made to Boeing's secondary use of licenses in the Canadian border region of Washington state.¹³ Reliance on secondary operations cannot be a mainstay of the Supplement's border area solution.

B/ILT users require communications that are reliable and durable in order to perform their essential functions, including internal safety functions. Such critical internal business communications should not be jeopardized or compromised by the potential for harmful third party interference.¹⁴ Current use of Canadian spectrum under secondary status is by no means an ideal situation; it is a direct result of the dire spectrum shortage in the region. The Supplement will both make the B/ILT spectrum shortage in Border Region 5 worse and increase the likelihood of harmful interference to its current secondary operations by virtue of both the proposed rebanding and the encouraged increase in use of the primary Canadian allocations.

The Power Levels Prescribed in the Supplement are Infeasible

The Supplement calls for significantly increased power levels after rebanding in order to be provided relief in the case of any future intermodulation or out-of-band ("OOB") emissions interference from CMRS systems.¹⁵ For example, the Supplement calls for increasing desired power levels received on the street by as much as 33 dB (up from the -98 dBm baseline) for both

¹¹ More specifically, the proposal would require B/ILT licensees below Line A to operate at 854-861/809-816 MHz but B/ILT licensees above Line A to operate at 862.25-863.9/817.25-818.9 MHz.

¹² See Supplement at Appendix G-3.

¹³ See *id.* at 37 n. 63.

¹⁴ See Initial Comments of The Boeing Company, *Improving Public Safety Communications in the 800 MHz Band*, WT Docket No. 02-55 at 17-18 (filed May 6, 2002).

¹⁵ See Supplement at 41-42 and Appendix F.

thresholds at 860.5 to 861.0 MHz.¹⁶ Such provisions would prove technically prohibitive and would likely violate existing bilateral agreements.

As a threshold matter, it is unclear whether the proposal's interference mitigation provisions even apply to the border areas and their unique rebanding issues.¹⁷ Although sufficient interference mitigation procedures are needed for the border areas, if the Supplement's proposed procedures applied, they would not be feasible in Border Region 5. Existing sites could not provide power increases of such a magnitude given existing transmitter power and antenna gain limitations. Realigning B/ILT sites to increase relative signal levels would essentially require B/ILT licensees to transform their systems into cellular-type low-site systems. This would necessitate a wholesale reengineering of existing systems; acquisition of new spectrum (that, as discussed above, will probably not be available) along with related facilities; and purchase of new, expensive equipment.

We are unaware of any available equipment that could increase transmitter power or antenna gains sufficient to meet the 33 dB threshold required by the Supplement from existing high site Noise Limited Systems (NLS). Even if such equipment existed, the increased power levels would significantly reduce current channel re-use capabilities because of the increased likelihood of interference. The increased power levels would also lead to additional co-channel and adjacent channel interference. Finally, the increased power levels called for in the Supplement would have the potential to violate bilateral agreements with Canada because the increased U.S. signal levels at the borders would exceed the currently allowable limits.

Alternatives

Specific to Border Region 5, the only technically feasible solution for eliminating 800 MHz Public Safety interference in the context of a rebanding scenario would require interfering sites to reduce transmitter power levels. Interfering sites would also need to employ remote receive locations or bi-directional amplifiers ("BDAs") and radiating coax for stubborn in-building and below-ground locations in a manner similar to the technical measures currently employed by Public Safety and B/ILT licensees in the region.

As an alternative to the various technical fixes that would be needed to resolve 800 MHz Public Safety interference in the border areas, an alternate solution would be a comprehensive overhaul of the U.S.'s bilateral agreements with Canada and Mexico to provide border area licensees spectral equality with the rest of the United States. In many cases where signal compatibility exists, these BDAs could be shared systems between Public Safety, B/ILT, and CMRS operators.

¹⁶ *Id.* at Appendix F-3.

¹⁷ For example, Region 5 B/ILT operations at 862.25-863.9 MHz under the Supplement would be considered cellular operations for the purposes of Appendix F interference mitigation requirements.