Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of Service Rules for the 698-746, 747-762 and 777-792 MHz Bands	)	WT Docket No. 06-150
Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission's Rules	)	WT Docket No. 06-169
Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band	)	PS Docket No. 06-229
Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010	)	WT Docket No. 96-86

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COMMENTS OF ACCESS SPECTRUM, LLC, DOMINION 700, INC., HARBOR GUARDBAND, L.L.C., AND PEGASUS COMMUNICATIONS CORPORATION

I. INTRODUCTION AND SUMMARY

By its actions in this 700 MHz proceeding, the Commission will determine the future of wireless broadband in America, for both the commercial companies that serve U.S. consumers and businesses, and the nation's first responders, whose mission is the protection of life and property. The 700 MHz band offers spectacular potential if the decisions are sound, but the consequences could be disastrous if the Commission fails to adopt the right approach to licensing this band.

Among the five different Band Plan Proposals set forth in the Further Notice of Proposed Rulemaking,[1] Band Plan Proposal Number 3 is the right choice for the nation and for the licensed constituencies who would provide service in the Upper 700 MHz band.

For Public Safety, Band Plan Proposal Number 3 would:

- Facilitate robust broadband capabilities and increase technology choices;
- Encourage public-private partnerships thereby increasing the likelihood that Public Safety obtains nationwide interoperable broadband service;
- Enable interoperable communications nationwide for Public Safety without isolating the border regions in the United States from the rest of the country; and
- Provide funding for the reconfiguration of the public safety band.

For commercial licensees, Band Plan Proposal Number 3 would:

- License spectrum blocks of sufficient size to permit deployment of the widest range of broadband technology options without creating advantages for one technology over another;
- Maximize the amount of 700 MHz commercial spectrum that could be used for broadband operations by minimizing the commercial spectrum that would be devoted to guard bands; and
- Make it possible for incumbents to augment existing networks and/or new entrants to build new ones, enhancing the possibilities for increased broadband penetration rates throughout the United States.

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[1] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands; Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; Section 68.4(a) of the Commission's Rules Governing Hearing Aid-Compatible Telephones; Biennial Regulatory Review – Amendment of Parts 1, 22, 24, 27, and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services; Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission's Rules; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band; Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010*, Report and Order and Further Notice of Proposed Rulemaking, WT Docket Nos. 96-86, 01-309, 03-264, 06-150, and 06-169, CC Docket No. 94-102 and PS Docket No. 06-229, FCC 07-72 (rel. April 27, 2007) *("Further Notice").*

By contrast, the adoption of Band Plan Proposal Numbers 1 or 2 would lead to catastrophic results. Band Plan Proposal Numbers 1 and 2 would harm Public Safety because, if either were adopted:

- Public safety agencies in border areas would be deprived of mission-critical narrowband voice interoperability with public safety agencies in other parts of the nation (or even in other parts of their own states);
- Public safety agencies would be saddled with the costs of reconfiguring the public safety band; and
- The costs of reconfiguring the public safety band would likely be higher than under Band Plan Proposal Number 3 and would be indeterminate because it will be years before incumbent TV broadcasters vacate TV channels 64 and 69 in Canada and it is uncertain when (and indeed, if) incumbent TV broadcasters in Mexico will vacate TV channels 63, 64, 68 and 69.

In addition, Band Plan Proposal Numbers 1 and 2 would impede commercial use of the spectrum by:

- Creating a potentially unlawful "easement" over commercial spectrum adjacent to the public safety band which would reduce the value of the commercial spectrum at auction and likely would invite litigation; and
- Creating a "Swiss cheese" spectrum plan that would present considerable technical problems for commercial deployment in the D or E Blocks, because of the combined effects of the proposed "easement" and the grandfathering of the 10 B Block licenses not held by the Commission.

In these comments, Access Spectrum, LLC; Dominion 700, Inc.; Harbor Guardband, LLC; and Pegasus Communications Corporation[2] (collectively, "Upper 700 MHz Licensees"):

- Urge adoption of Band Plan Proposal Number 3 and explain how it, in contrast to Band Plan Proposal Numbers 1 and 2, resolves the international border issue and provides funding for public safety narrowband consolidation;
    - Describe the path to re-packing the A Block;

[2] This group represents all of the Upper 700 MHz A and B Block licensees with the exception of Radiofone Nationwide PCS, which holds the B Block license in the Gulf of Mexico, and PTPMS II Communications, Inc., which holds B Block licenses in Albuquerque and Des Moines and an A Block license in Buffalo.

- Indicate a potential willingness to contribute their spectrum in a two-sided auction to ensure that bidders on the 5 MHz paired D Block have the ability to secure the additional 1 MHz paired of A Block spectrum;
- Describe the method of harmonizing the technical rules for the new A Block with those of the C and D Block, which is an integral component of Band Plan Proposal Number 3;

- Urge the Commission to reject Band Plan Proposal Numbers 1 and 2;
  - Explain that the spectrum easement proposal under Band Plan Proposal Numbers 1 and 2 fails to provide interoperability for public safety agencies in international border regions and raises legal issues that make the proposal vulnerable to litigation;
  - Explain that Band Plan Proposal Numbers 1 and 2 result in the imposition of higher costs on public safety agencies while failing to provide a funding mechanism for reconfiguration of the public safety band;
  - Describe the "Swiss cheese" problem that would harm commercial operations in the D or E Block as a result of the proposal under Band Plan Proposal Numbers 1 and 2 to grant an easement to public safety and grandfather the existing B Block licenses;
- Recommend a mechanism for compensating existing B Block licensees that will relinquish their licenses to facilitate Band Plan Proposal Number 3;
- Recommend technical changes for the A and B Blocks that should be adopted if the Commission does not adopt changes to the commercial 700 MHz band plan; and
- Discuss the interference climate at the 776 MHz and 746 MHz interfaces, putting to rest concerns that have been raised in the record.

II. BANI) PLANS

The Upper 700 MHz Licensees endorse Band Plan Proposal Number 3 ("Band Plan 3"). Band Plan 3 satisfies the preconditions established by Public Safety and the Commission for reconfiguration of the Upper 700 MHz public safety allocation, and increases the amount of spectrum available for full broadband use by both Public Safety and commercial entities. The Upper 700 MHz Licensees urge the Commission to reject Band Plan Proposal Numbers 1 and 2 ("Band Plan 1" and "Band Plan 2"). Band Plans 1 and 2 do *not* satisfy the preconditions established by Public Safety and the Commission

for consolidation of the public safety allocation and are manifestly inferior to Band Plan 3.

A. The Commission Should Adopt Band Plan Proposal Number 3

The Upper 700 MHz Licensees strongly support Band Plan 3 set forth in the *Further Notice*.[3] Under this proposal, the existing A and B Block licensees would consolidate into a new A Block relocated from 746-7471776-777 MHz to 762-763/792-793 MHz, thereby clearing the B Block.[4] The cooperation of the A and B Block licensees in reorganizing A and B Block spectrum would allow the Upper 700 MHz C Block to grow to 11 MHz paired, while the Upper 700 MHz D Block would become 5 MHz paired. As a result, the Commission could auction 32 MHz of commercial broadband spectrum in a uniform fashion *nationwide*. The new B Block would be 1 MHz paired (located at 775-776/805-806 MHz) and would be held by the Commission. Band Plan 3 resolves the issues identified by Public Safety as pre-conditions for consolidation of the public safety narrowband spectrum. Band Plan 3 does not allocate any additional spectrum to Public Safety at this time, but it preserves the option of reallocating the 1 MHz paired B Block to Public Safety at a later date, should Congress direct the Commission to do so or should the Commission decide that such an allocation would serve the public interest and be allowable by law after the 700 MHz auction and the DTV transition have concluded.

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[3] The Upper 700 MHz Licensees continue to believe that adoption of the Broadband Optimization Plan ("BOP") would be legally sound and continue to view it as the band plan that is superior to all others proposed in the record of this proceeding. *See infra* Appendix B. However, given that there already exists a detailed record on the BOP, and in light of the tentative conclusions in the *Further Notice*, these comments will focus on the band plans described in the *Further Notice*.

[4] This re-packing would result in a significant reduction in the number of MHz-pops held by the current A and B Block licensees.

This section discusses the implementation details for Band Plan 3, specifically: (1) resolution of the international border issue; (2) the provision of funding for the public safety band reconfiguration; (3) the re-packing of the A Block; (4) the potential use of two-sided auctions to facilitate aggregation of the A and D Blocks; and (5) changes to the technical rules that should be adopted with the new band plan.

1. International border issue

In the *Further Notice*, the Commission tentatively concludes that it should consolidate the public safety narrowband spectrum at the upper end of Public Safety's 700 MHz allocation,[5] and this consolidation is reflected in all five of the alternative band plans for the Upper 700 MHz band set forth in the *Further Notice*. However, both Public Safety and the Commission are clearly on record setting forth certain necessary pre-conditions to such a consolidation. Among the most important of these pre-conditions is resolution of issues associated with public safety narrowband communications along the Canadian and Mexican borders.

At the heart of these border issues is the challenge of achieving narrowband voice interoperability homogenously throughout the United States including, importantly, interoperability *between* the border areas and the rest of the United States. As explained below, the only way to ensure nationwide interoperability for public safety's mission-critical narrowband voice communications is the adoption of a band plan that includes permanent, nationwide narrowband interoperability channels on TV channels 63, 64, 68 *and* 69. Band Plan 3 meets this requirement through the same mechanism developed by the Technical Working Group for the BOP – by shifting the public safety allocation down

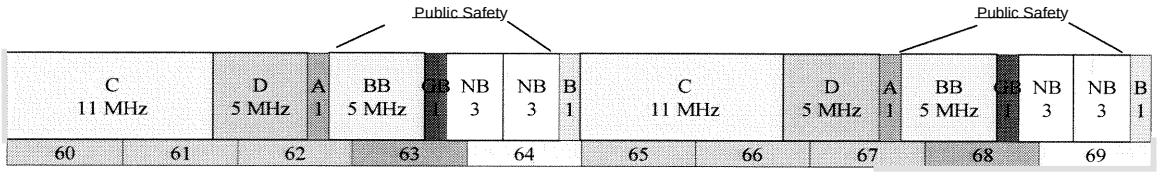
[5] *Further Notice* ¶ 257.

1 MHz, thereby enabling interoperability channels to exist in TV channels 63 and 68, as well as in TV channels 64 and 69. In effect, the public safety allocation would include two sets of interoperability channels: one set in TV channels 63 and 68 and a second set in TV channels 64 and 69.

A change in the use of the Upper 700 MHz band must be coordinated with countries that share a border with the United States because a change in allocations or assignments on one side of the border may have an impact on allocations or assignments on the other side. Currently the required coordination along the U.S. borders is governed by a formal agreement between the FCC and Industry Canada and between the U.S. Department of State and the Mexican Secretariat of Communications and Transportation. These border agreements seek to minimize harmful interference across the borders and, where interference cannot be avoided, to apportion the available spectrum channels between the respective two countries in a way that is fair and reflects the relative needs of each country.

Television broadcast operations in Canada or Mexico would cause interference with public safety use of the same spectrum in the United States for narrowband communications. As illustrated below, some of the public safety narrowband spectrum under Band Plan 3 overlays TV channels 63 and 68, while the majority of public safety narrowband spectrum overlays TV channels 64 and 69.

Band Plan Proposal Number 3



The Canadian government has agreed to clear broadcasters from TV channels 63 and 68 and to use the cleared spectrum for public safety purposes, and it recently established a hard date of August 31, 2011 as the deadline for the transition from analog broadcasting to digital and high-definition broadcasting that would clear broadcasters from TV channels 64 and 69.[6] Mexican television broadcasters currently operate in the border regions on TV channels 63 and 64.[7] The agreement governing the sharing of the 700 MHz spectrum along the U.S.-Mexican border does not include *any* statement of intent to vacate this spectrum of Mexican broadcast operations.

Under Band Plan 3, there would be 2 MHz of spectrum (1 MHz paired) in TV channels 63 and 68 for public safety narrowband operations. The 700 MHz Technical Working Group ("TWG") has concluded that 2 MHz of spectrum in TV channels 63 and 68 (769-770 MHz and 799-800 MHz) for public safety narrowband channels would

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6 *See* Broadcasting Public Notice CRTC 2005-53, "Determinations Regarding Certain Aspects of the Regulatory Framework for Over-the-Air Television," ¶ 61 (rel. May 17, 2007), *available at:* <http://www.crtc.gc.ca/archive/ENG/Notices/2007/pb2007-53.htm> ("CRTC 2005-53").

7 *See* Protocol Between the Department of State of the United States of America and the Secretariat of Communications and Transportation of the United Mexican States Concerning the Allotment and Use of the 698-806 MHz Band for Terrestrial Non-Broadcasting Radiocommunication Services Along the Common Border, Appendix II ("U.S.-Mexico Protocol"). Although Mexican broadcast operations are permitted on channels 68 and 69, our research uncovered no Mexican television broadcast stations operating on those channels along the U.S./Mexico border.

provide ample spectrum to accommodate U.S. public safety narrowband deployments, including interoperability requirements, in the border regions.[8] The TWG concluded that it was desirable to have as many interoperability and statewide channels as possible in the 1 MHz of paired narrowband spectrum that remains in TV channels 63 and 68. Otherwise, if there were no allotments for these uses in TV channels 63 and 68, the border region would have different interoperability channels than the rest of country and, in terms of a statewide system, different statewide channels. The use of "different interoperability channels" is an oxymoron because this approach would defeat the overarching policy goal of achieving interoperability using today's public safety narrowband systems and radios. Currently, there are over 600,000 public safety radios deployed, and most do not have the capability to reprogram the channels over-the-air. Therefore, reconfiguring public safety radios during emergencies to accomplish interoperability would not be a viable option.' Accommodating these important interoperability channels in TV channels 63 and 68 would also facilitate interoperability between U.S. and Canadian public safety entities." To accommodate those border areas of Mexico subject to interference from television broadcast operations on TV channels

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[8] *See* Report of the 700 MHz Technical Working Group, transmitted via letter from Ruth Milkman, Counsel for Access Spectrum, LLC, and Kathleen Wallman, Adviser to Pegasus Communications Corporation, WT Docket Nos. 06-169 and 96-86, at 11-12 (Oct. 23,2006) ("First TWG Report").

[9] Even if these radios were able to be "flashed" over-the-air, requiring public safety agencies to perform this function during a time of emergency would present a suboptimal arrangement. During an emergency situation when time is of the essence, the radio reprogramming would have to be performed quickly and with perfect accuracy because delays or mistakes could be devastating. The possibility of delays or mistakes in the process during a time of emergency creates a substantial and unnecessary risk.

[10] Canada has reserved channels 63 and 68 for public safety use.

63, 64, 68 and 69, there must be narrowband interoperability channels on frequencies within the spectrum shared by TV channels 63, 64, 68 and 69.

Band Plan 3 solves the international border issue in the same manner in which it would have been resolved under the BOP. Specifically, the public safety narrowband spectrum would be shifted down by 1 MHz, enabling narrowband interoperability channels to be placed in channels 63 and 68, as well as in channels 64 and 69. The spectrum shift would provide interoperability for all public safety agencies while Canadian and Mexican broadcasters continue to occupy channels 64 and 69, including those public safety agencies located along the Canadian and Mexican border. In addition, under Band Plan 3 there would be sufficient public safety narrowband spectrum available to provide for simultaneous narrowband interoperability capabilities on TV channels 64 and 69 for those regions along the Mexican border in which Mexican television broadcasters continue to operate in TV channels 63 and 68.[11]

2. Funding Public Safety Narrowband Consolidation

The adoption of Band Plan 3 would satisfy Public Safety's requirement that it not bear the cost of consolidating public safety narrowband spectrum. If, as part of adopting Band Plan 3, the Commission relocated the A Blocks, harmonized the A Block rules with the rules that apply to the C and D Blocks (including removal of the cellular architecture restrictions on the **A** Block), and issued vouchers to compensate existing 700 MHz commercial licensees for a reduction in their MHz-pops, the Upper 700 MHz Licensees would make the same funding commitment that Access Spectrum and Pegasus made in

[11] There are no places along the U.S./Mexico border where there are television broadcast operations in both the 63/68 TV channel pair and the 64/69 TV channel pair. As such, public safety agencies would have complete interoperability along the U.S. border with Mexico under Band Plan 3.

conjunction with the BOP.[12] Specifically, the Upper 700 MHz Licensees would commit to fund the conversion of existing 700 MHz narrowband public safety systems and the necessary changes to the Computer Assisted Pre-Coordination Resource and Database System ("CAPRAD").[13]

The receipt of vouchers is included as a condition of funding the public safety band reconfiguration because under Band Plan 3, the existing Upper 700 MHz licensees *lose* spectrum in the spectrum swap, whereas the BOP provided an even exchange of spectrum on a MHz-pop basis.[14] The issuance of vouchers would put the Upper 700 MHz Licensees in a position similar to the one that Access Spectrum and Pegasus would have had if the BOP had been adopted (and which would have triggered the original funding commitment).[15]

The Upper 700 MHz Licensees would bear the entirety of the financial burden in reconfiguring the public safety 700 MHz band although *all* of the other Upper 700 MHz commercial licensees, including future licensees in the C and D Blocks, as well as Public

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[12] *See* Comments of Access Spectrum, LLC and Pegasus Communications Corporation, WT Docket Nos. 96-86 and 06-169, at 16-17 (Oct. 23,2006) ("Access Spectrum/Pegasus A/B Comments").

[13] Assuming it accepts this commitment, a classic agency problem will arise if the payor of the reconfiguration costs is not the ultimate customer of the product vendor, giving the product vendor the incentive to inflate costs because the customer is not responsible for paying for the product. The Commission and the public safety community should encourage equipment vendors to work as partners with the Upper 700 MHz Licensees to maintain the lowest possible costs for reconfiguration funding.

[14] As discussed in Section A of Appendix B, there has been some misunderstanding with respect to this point in the context of the BOP. Under the BOP, the Upper 700 MHz Licensees would *not* have received any additional spectrum, but rather would have retained the same number of MHz-pops as are currently held.

[15] Vouchers would operate as credits that could be applied toward a winning bid in any spectrum auction. They would be fully transferable and divisible. The details of the voucher proposal are discussed in Section II.A.3, *infra*.

Safety, would benefit from the consolidation of public safety narrowband spectrum.[16] Due in part to the cooperation and financial commitment of the Upper 700 MHz Licensees, under Band Plan 3, the new C Block licensee would benefit from the larger spectrum block made possible by giving it bandwidth that previously was allocated to the B Block. The D Block licensee would benefit from improved interference conditions due to the greater distance of public safety narrowband operations from the band edge of the D Block. The Commission would then be in the position of being able to auction 32 MHz of commercial broadband spectrum in a uniform manner nationwide.

It should be emphasized that none of these benefits to the commercial allocation would be possible without the willingness and ability of Public Safety to consolidate its narrowband allocation. In the *Public Safety Eighth NPRM*, the Commission tentatively concluded, in accordance with Public Safety's preference at that time, that it would not alter Public Safety's narrowband allocation.[17] However, the commitment of Public Safety, the Upper 700 MHz Licensees, and several commercial vendors, exhibited in their collaborative work on the 700 MHz Technical Working Group, allowed the development of solutions and agreements to enable such a consolidation.

3. License Modifications and Re-Packing the A Block

Re-packing Agreement. The implementation of Band Plan 3 contemplates that the existing A and B Block licensees will re-pack into the A Block. All of the Upper 700 MHz A and B Block licensees are discussing the terms of a re-packing agreement. We

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[16] Note that this is a substantial financial commitment for small companies such as the Upper 700 MHz Licensees.

[17] *The Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010*, Eighth Notice of Proposed Rulemaking, 21 FCC Rcd 3668, ¶ 13 (2006).

expect to have the final details determined by the close of the pleading cycle, May 30, 2007. On or before May 30, the A and B Block licensees will file a re-packing agreement that shows the specific A Block geographic areas each licensee will occupy as well as a summary of the MHz-pop auction discount vouchers due to each licensee for spectrum yielded in order to implement the re-packing. Under the license modification plan, the B Block licensees, with the exception of Radiofone,[18] will give up their B Block licenses. As part of the Agreement, the A and B Block licensees will agree to the modifications to their licenses necessary to implement the re-packing agreement.

Vouchers. In order to clear the B Block of incumbent licensees, the re-packing plan involves a significant reduction in the MHz-pops currently held by the Upper 700 MHz A and B Block licensees. The A and B Block licensees should be compensated for this reduction in the spectrum that they acquired at auction. In particular, vouchers should be issued to the A and B Block licensees in exchange for the return of their licenses to the Commission.'' The vouchers would operate like the Auction Discount Voucher ("ADV") issued to Qualcomm.[20] Specifically, the spectrum vouchers could be applied toward a winning bid in any spectrum auction for any spectrum band and would be fully transferable and divisible (before, during and after the 700 MHz auction). The Commission would assign a $/MHz-pop value to the vouchers equal to the gross value[21]

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[18] *See Further Notice* ¶ 186 n.421.

[19] Vouchers would compensate A and B Block licensees for the spectrum they acquired at auction in 2000 and 2001 for approximately $22 million.

[20] *See Qualcomm Inc.*, Order, 16 FCC Rcd 4042 (2000) *("Qualcomm Order").*

[21] In establishing a dollar value, gross, not net, bid prices would be used. In other words, designated entity discounts or bidding preferences would not be applied when calculating the total value of the spectrum as bid at auction. In this way, existing A and B

of winning bids in the auction of Upper 700 MHz licenses divided by the total MHz-pops auctioned.[22]

The Commission possesses the authority to issue spectrum vouchers to the A and B Block licensees. When it issued the ADV to Qualcomm, which was in response to a mandate from the U.S. Court of Appeals for the D.C. Circuit, the Commission concluded that Section 402(h) of the Communications Act[23] provided a basis for the Commission's authority to do so.[24] However, the Commission also concluded that it derived authority to issue the ADV from Sections 4(i)[25] and 309(j)(13)(E).[26] It recognized that the Communications Act neither specifically authorized nor specifically prohibited the issuance of an ADV,[27] and noted that the ADV was structured to operate in manner similar to a bidding credit, the issuance of which was expressly authorized by the

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Block licensees would not be artificially disadvantaged by the availability of discounts and bidding preferences for designated entities.

[22] This is similar to the approach contemplated by the Commission in the context of bidding credits. *See, e.g., Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 14165, ¶ 306 (2004) ("We propose that we use an average price per MHzPops, derived from the auction for new licenses in this band, to give the bidding offset credit a face dollar value.").

[23] 47 U.S.C. § 402(h) (establishing it as a duty of the Commission to give effect to an order of the court reversing an earlier Commission decision).

[24] *Qualcomm Order* ¶ 11.

[25] 47 U.S.C. § 154(i) ("The Commission may perform any and all acts, make such rules and regulations, and issue such orders, not inconsistent with this Act, as may be necessary in the execution of its functions.").

[26] *Qualcomm Order* ¶ 15; 47 U.S.C. § 309(j)(13)(E) (governing issuance of pioneer's preferences).

[27] *Qualcomm Order* ¶ 15.

Communications Act.[28] The Commission can and should facilitate the necessary 700 MHz band reconfiguration by issuing spectrum vouchers.

Gulf of Mexico. One Upper 700 MHz licensee, Radiofone PCS, has expressed the desire to retain its B Block license in the Gulf of Mexico.[29] As the *Further Notice* states, the BOP could be implemented while allowing Radiofone to retain its B Block license in the Gulf of Mexico given the absence of any state or local public safety networks with planned operations in the Gulf.[30] Likewise, Band Plan 3 also could be implemented while grandfathering Radiofone PCS's license in the Gulf of Mexico.[31]

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[28] *Id.* ¶ 15 n.37 (citing 47 U.S.C. § 309(j)(4)(D)). In a separate proceeding, when the Commission decided against issuing spectrum vouchers to Nextel in conjunction with the 800 MHz band reconfiguration, it did so not because it lacked authority to issue the vouchers, but rather because the use of vouchers would not have assured the timely and certain access to the additional spectrum or the associated revenue that was needed. *Improving Public Safety Communications in the 800 MHz Band; Consolidating the 800 and 900 MHz Industrial/Land Transportation and Business Pool Channels; Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems; Petition for Rule Making of the Wireless Information Networks Forum Concerning the Unlicensed Personal Communications Service; Petition for Rule Making of UT Starcom, Inc., Concerning the Unlicensed Personal Communications Service; Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile Satellite Service*, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969, ¶ 222 (2004).

[29] *See* Comments of Radiofone Nationwide PCS, L.L.C., WT Docket Nos. 96-86 and 06-169 (Oct. 23, 2006).

[30] *See Further Notice* ¶ 186 n.421; *see also* Reply Comments of Access Spectrum, LLC and Pegasus Communications Corporation, WT Docket Nos. 96-86 and 06-169 at 21-22 (Nov. 13, 2006) ("Access Spectrum/Pegasus A/B Block Reply Comments"). Indeed, Access Spectrum has a customer operating on its A Block license in the Gulf of Mexico until 2008. If the Gulf of Mexico geography is included in reconfiguring the spectrum, and Access Spectrum must give up its A Block license, Access Spectrum's customer should be permitted to use the spectrum for which it has contracted until the expiration of its contract in 2008.

[31] Band Plan 3 also could include the Gulf of Mexico should Radiofone PCS determine that it would like to participate in the plan.

4. Two-sided Auctions

The *Further Notice* seeks comment on whether a two-sided auction should be used to facilitate the combination of the A Block and the D Block.[32] In Appendix A to this filing, the Upper 700 MHz Licensees describe a possible "option variant" to two-sided auctions. We characterize this as an "option variant" because it uses techniques that are commonly used in commercial negotiations to enable the winner of the 5 MHz paired D Block license to also acquire the adjacent 1 MHz paired A Block. The Upper 700 MHz Licensees believe that the option variant described in Appendix A avoids some of the potential pitfalls of two-sided auctions and would not require complicated or time-consuming modifications to the Commission's auction software.[33]

The *Further Notice* indicates that Access Spectrum and Pegasus did not address how the Commission should license the new B Block that would be located at 775-776/805-806 MHz.[34] Adoption of Band Plan 3 would not require the licensing of the B Block within the statutory time-frame for the 700 MHz auction because that spectrum already has been allocated to commercial use and assigned by competitive bidding,

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[32] *See Further Notice* ¶¶ 187,245. Under Band Plan 3, the A Block will be adjacent to the 5 MHz D Block. Although the suggestions outlined in Appendix A are written to apply to Band Plan 3, the two-sided auction it describes would also apply to the combination of the A Block and E Block if the Commission were to adopt Band Plans 4 or 5.

[33] While the Upper 700 MHz Licensees are open to the possibility of including their A Block licenses in the auction so as to enable prospective bidders for the D Block to acquire a 6 MHz pair, the implementation of a two-sided auction is not a necessary condition to the adoption of Band Plan 3 (or Band Plans 4 or 5) and the Upper 700 MHz Licensees are not conditioning their proposal to re-pack the A and B Block spectrum on the implementation of such a two-sided auction.

[34] *Further Notice* ¶ 197 n.433.

consistent with section 337 and the DTV Act.[35] In light of the compressed time frame to address the myriad of other issues surrounding the 700 MHz auction, the Commission may wish to defer consideration of relicensing the B Block until after it has completed the 700 MHz auction, or even after the DTV transition. At that time, the Commission should consider whether the public interest would be served best by reallocating the spectrum to public safety use[36] or by re-auctioning the spectrum as a commercial guard band.

5. Technical and Other Rules

Technical Rules. In adopting Band Plan 3, the Commission should apply the same technical rules to the new A Blocks that govern the Upper 700 MHz C and D Blocks to promote the most efficient use of the spectrum and to facilitate the combined use of these spectrum blocks for the provision of broadband services. The harmonization of the technical rules for Upper 700 MHz commercial licensees is appropriate under Band Plan 3 because the A Block would no longer be adjacent to public safety narrowband operations. In the event that Band Plan 3 (or Band Plans 4 or 5) are adopted, it is necessary that the technical rules among the Upper 700 MHz A, C and D commercial licenses be harmonized, because not doing so would create a barrier to uniform deployment across the band (including potential public/private mixed use networks) and would be particularly problematic if the Commission were to implement a two-sided auction. Specifically, the Commission should apply to the new A Block the same out-of-

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[35] 47 U.S.C. § 337; Digital Television Transition and Public Safety Act of 2005, Title III (§§ 3001-3013) of the Deficit Reduction Act of 2005, Pub. L. No. 109-171, 120 Stat. 4 (2006) ("DTV Act").

[36] *See Further Notice* ¶¶ 227-238 (discussing the limitations on the Commission's legal authority to implement the BOP).

band emissions limits at the band edges, the same service rules (without the coordination requirement or the prohibition on cellular operations) and the same license terms as the Upper 700 MHz C and D Blocks.[37]

If the Commission consolidates public safety narrowband operations, the interface between the commercial and public safety allocation should reflect the recommendation made by the Technical Working Group.[38] Current rules require that the power of C and D Block transmitters be attenuated out-of-band by at least 43 + 10 log (P) dB, except inside public safety narrowband spectrum and wideband spectrum (*i.e.*, between 764 - 776/794-806 MHz), where attenuation must be at least 76 + 10 log (P) dB for base station transmissions and 65 + 10 log (P) dB for mobile unit transmissions.[39] As the TWG recommended, the 76 + 10 log (P) dB attenuation requirement should remain in place to protect public safety narrowband and wideband operations. However, the public safety broadband spectrum adjacent to the commercial A Block would have the traditional CMRS 43 + 10 log (P) dB attenuation requirement to encourage the development of

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[37] ***See*** Comments of Access Spectrum, LLC, Columbia Capital III, LLC, Pegasus Communications Corporation, and Telcom Ventures, LLC, WT Docket Nos. 06-150 and 01-309 and CC Docket No. 94-102, at 31-35 (Sept. 29,2006) ("Access Spectrum/Pegasus Sept. 29 Comments"); ***see*** *also* Access Spectrum/Pegasus A/B Comments at 9-11.

[38] The interface between the Public Safety and A Blocks would be handled in the same way as under the BOP, as described in the Second Report of the Technical Working Group, in order to ensure the usefulness of both the public safety and commercial allocations, as well as setting up the band for public-private partnerships. ***See*** Second Report of the 700 MHz Technical Working Group, transmitted via letter from Ruth Milkman, Counsel for Access Spectrum, LLC and Kathleen Wallman, Adviser to Pegasus Communications Corporation, WT Docket Nos. 06-169 and 96-86, at 3-4 and Appendix B (Jan. 26,2007) ("Second TWG Report").

[39] 47 C.F.R. § 27.53(c).

public-private partnerships.[40] Further, the TWG recommended that wideband operations be permitted only on spectrum above 764/794 MHz. We support the TWG's conclusion, though if the Commission adopts an all-broadband requirement,[41] such a prohibition would be unnecessary.[42] Therefore, the power of A Block transmitters should be attenuated out-of-band by at least 43 + 10 log (P) dB at the band edges, and at 764.5/794.5 MHz power from the A Block should be attenuated to at least 76 + 10 log (P) dB for base station transmissions and 65 + 10 log (P) dB for mobile unit transmissions.[43] These revised OOBE limits would ensure that public safety operations are adequately protected from interference and would be consistent with the approach endorsed by the public safety community.[44]

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[40] In this regard, the interference protections applicable to the lower 1.5 MHz of the public safety allocation (*i.e.*, the bottom broadband channel and its requisite "internal buffer") should be the same under Band Plan 3 as they would have been applied to the lower 1.5 MHz of the public safety allocation under the BOP. The 700 MHz Technical Working Group expected Public Safety to deploy cellular, broadband systems at least within the bottom broadband channel (*i.e.*, approximately the lower 1.5 MHz of spectrum) and proposed traditional CMRS OOBE interference protection to public safety operations for that broadband channel. *See* Second TWG Report at 4-5.

[41] *See Further Notice* ¶ *250* (tentatively concluding to redesignate public safety wideband spectrum for broadband use and to prohibit wideband operations on a going forward basis).

[42] If the Commission concludes that there should be no wideband operations in all or part of the public safety non-narrowband allocation, it should consider applying the traditional CMRS interference protection requirements to the entire public safety broadband allocation. Where the Commission permits narrowband and wideband operations within the public safety allocation, it should maintain the current interference protection requirements.

[43] In the event that public safety agencies in international border areas temporarily deploy local narrowband systems in the 764-764.5/794-794.5 MHz spectrum, the out-of-band emission limits in border areas could temporarily be set at 76 + 10 log (P) dB for base station transmissions at 764/794 MHz until the Canadian broadcast transition is complete.

[44] *See, e.g.,* Letter from Vincent R. Stile, Chair, National Public Safety Telecommunications Council, to Marlene H. Dortch, FCC Secretary, WT Docket Nos.

In addition, the new A Block should no longer be subject to guard band rules such as stringent coordination requirements[45] and the current prohibition on cellular architecture.[46] As Access Spectrum and Pegasus have explained, at the time the Commission adopted the cellular architecture prohibition, it was expected that the A and B Blocks would be used for private wireless services, employing high-power, high-site, non-cellular system architectures.[47] The broadband operations envisioned for the 700 MHz band will almost certainly be low-power, low-site cellular systems in order to achieve the capacity, throughput, and service quality required for such broadband operations. As a result, if the prohibition on cellular architecture were retained, it would prevent the deployment of next-generation broadband operations in the A Block, including commercial networks that may be shared with Public Safety.

License Terms. In the *Report and Order*, the Commission did not revise the license term for Guard Band licensees because it considered such revisions to have fallen outside the scope of the *700 MHz Commercial Services* proceeding. The *Further Notice* seeks comment on any additional requirements that should be adopted in conjunction

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96-86, 06-150, and 06-169 and PS Docket No. 06-229 (Feb. 22,2007) (endorsing the Second Report of the 700 MHz Technical Working Group) ("*NPSTC Feb. 22, 2007 Letter*").

[45] The coordination requirements applied to the A Block should be harmonized with those of the C and D Blocks. 47 C.F.R. § 27.303. Any changes to the C and D Block coordination requirements should apply to the entire Upper 700 MHz commercial allocation (with the exception of the new B Block at 775-776/805-806 MHz that would be located immediately adjacent to public safety narrowband spectrum).

[46] 47 C.F.R. § 27.2(b).

[47] *See, e.g.*, *Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules*, Second Report and Order, 15 FCC Rcd 5299, ¶ 32 (2000) (regarding likely services in the 700 MHz Guard bands, citing example of "end users such as railroads or pipelines") ("*Upper 700 MHz Second R&O*").

with Band Plan 3.[48] It would be appropriate at this time to address revisions to the license terms for the 700 MHz Guard Band licenses, especially if the Commission implements a two-sided auction. Because the A and B Blocks would be used or usable for broadband communications, they should be licensed for the same duration as the C and D Blocks (which would also be usable for broadband communications). Harmonization of license terms would provide parity within the band, would eliminate a barrier to spectrum aggregation, and would facilitate the implementation of spectrum leasing across the band. Specifically, the A and B Block license terms should be for a period not fewer than 10 years from February 18, 2009, when broadcasters must vacate the spectrum.[49] This would be consistent with the Commission's decision to provide uniform license terms for the other 700 MHz commercial blocks to "provide[] a level of parity for services within the same band."[50]

Access Spectrum and Pegasus continue to believe that implementation of the BOP would be consistent with sections 337 and 309.[51] However, Band Plan 3 does not re-allocate any commercial spectrum to public safety use nor does it assign any spectrum without competitive bidding. Under Band Plan 3, all 36 MHz of spectrum allocated for commercial use will have been assigned by competitive bidding and the re-packing of B Block licensees into the A Block will result in a net reduction in spectrum holdings for those licensees. Therefore, Band Plan 3 does not contain any components that would

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48 *See Further Notice* ¶ 198.

49 47 U.S.C. § 309(j)(14)(A), as amended by the DTV Act, § 3002 (2006).

50 *Further Notice* ¶ 83.

51 *See* Appendix B.

cause concerns about compliance with Sections 337 or 309(j) of the Communications Act.

6. Variations on Band Plan 3 – Band Plans 4 and 5

Band Plans 4 and 5 modify the Upper 700 MHz guard bands in the same manner proposed in Band Plan 3. However, Band Plans 4 and 5 divide the larger 11 MHz paired license proposed in Band Plan 3 into two 5.5 MHz paired licenses (Blocks C and D), while retaining a 5 MHz paired block, referred to as the E Block, adjacent to the A Block. Each of these band plans satisfies the pre-conditions established by Public Safety for consolidation of public safety narrowband spectrum. All three band plans allow for nationwide, permanent narrowband interoperability channels in TV channels 63, 64, 68 and 69 and the Upper 700 MHz Licensees would agree to fund the expenses related to the consolidation of public safety's narrowband allocation if Band Plans 4 or 5 were adopted.

B. The FCC Should Reject Band Plan Proposal Numbers 1 and 2

The Commission should reject Band Plan Proposal Numbers 1 and 2 ("Band Plans 1 and 2"). These proposals fail to achieve the preconditions established by Public Safety for consolidation of public safety narrowband spectrum. They would isolate the narrowband voice operations of public safety agencies in international border regions, precluding interoperability with the rest of the nation because the easement proposal, as explained in detail below, utterly fails to resolve this issue. Isolating the narrowband voice operations of public safety agencies in international border regions could lead to disastrous results in the event of a large-scale emergency in which the aid of first responders from across the country is required, and would be a daily hindrance to the use of state-wide systems in border regions. There is no compelling reason to risk this outcome given the presence of an easily adoptable alternative which does not raise this

risk and which includes additional ancillary benefits.[52] In addition to the failure to provide for public safety narrowband voice interoperability in international border regions, Band Plans 1 and 2 also fail to provide a funding mechanism that would prevent the costs of consolidating the public safety narrowband spectrum (which would be both indeterminate and higher than under Band Plan 3) from falling on cash-strapped public safety agencies.[53] Finally, the proposal to grandfather operations in currently-licensed Upper 700 MHz B Blocks is ill-conceived and would lead to a "Swiss cheese" effect that would hamper the provision of commercial services in the D Block and would be likely to lead to litigation.

1. Band Plans 1 and 2 Fail to Provide Public Safety Interoperability in International Border Regions.

After reconfiguring the public safety band, Canadian and Mexican television broadcasters would interfere with U.S. public safety narrowband communications using the same frequencies in international border regions. Under Band Plans 1 and 2, the Commission proposes to allow Public Safety to avoid the problematic frequencies by using its internal guard band for narrowband interoperability. A temporary spectrum easement into adjacent commercial spectrum would, in turn, be established in these areas so as to permit Public Safety to utilize its full allocation of a paired 5 MHz of broadband spectrum.[54] This proposal would fail to provide public safety interoperability and, as

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[52] It is uncertain that the legal analysis applied to the Broadband Optimization Plan in the *Further Notice* could be extended in a manner that would find legal authority for the Commission to impose such an easement requirement upon the adjacent licensees. *See Further Notice* ¶ 230. As a result, such a requirement undoubtedly would invite litigation.

[53] The funding commitment extended by the Upper 700 MHz Licensees would not be available if the Commission adopted Band Plans 1 or 2.

[54] *Further Notice* ¶ 189.

explained below, would also unnecessarily risk litigation.

a. Spectrum Easement

Under Band Plans 1 and 2, the Commission proposes to temporarily move U.S. public safety narrowband operations in international border regions to the internal guard band between the public safety broadband and narrowband blocks at 769-770/799-800 MHz.[55] Commensurate with the 1 MHz shift within the public safety allocation, the Commission also proposes to create a "temporary easement" of 1 MHz for public safety broadband use into the adjacent commercial block.[56] The easement is designed to permit Public Safety to maintain narrowband operations *and* utilize a full 5 MHz pair of broadband spectrum during the period before Canadian and Mexican broadcasters are cleared from channels 64 and 69.

The Upper 700 MHz Licensees support the goal of ensuring that public safety agencies along the international borders maintain continuous access to their full complement of broadband spectrum. However, the easement mechanism the Cornmission proposes to accomplish that goal is fraught with problems. Specifically, the easement proposal: (1) fails to resolve the lack of narrowband voice interoperability for public safety agencies along the borders with Canada and Mexico; (2) imposes additional and indeterminate transition expenses and difficulties on public safety agencies without any specified funding mechanism; (3) injects uncertainty into the commercial auction process and forecloses the use of commercial spectrum by the licensee; and (4) threatens to impair the full and efficient use of the commercial spectrum block subject to the easement.

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55 *Id.* ¶ 188.

56 *Id.* ¶ 189.

The Commission's easement plan does not resolve the international border issue. The international border issue fundamentally is about the lack of narrowband voice interoperability caused by public safety agencies in one part of a state being unable to use *any* of the channels used by the public safety agencies in the rest of the state. For instance, under the proposed public safety easement plan, all of the narrowband interoperability channels of public safety agencies in downstate New York would be tuned to frequencies on television channels 64 and 69. Upstate New York public safety agencies could not use those channels because Canadian television broadcasters will still operate on channels 64 and 69 (at least through August 31,2011, assuming there are no delays in the CRTC's planned transition). Giving public safety agencies in upstate New York narrowband channels in the internal guard band would avoid interference with Canadian broadcasters on channels 64 and 69, but their interoperability channels would be tuned to frequencies on television channels 63 and 68, which, of course, would be different from the interoperability channels of public safety agencies in downstate New York. Therefore, under the easement proposal, if New York City police officers came to Buffalo to help during an emergency, the New York City officers would not be able to use their radios to communicate with the Buffalo officers because there would be no common interoperability channels. This is contrary to Congress' purpose of establishing the 700 MHz public safety allocation in order to enable interoperability. The lack of interoperability resulting from the easement proposal is contrary to Congressional intent. Simply put, in order to provide public safety narrowband interoperability nationwide, there must be specific, permanent, and uniform interoperability channels nationwide in

public safety spectrum spanning television channels 63/68 *and* 64/69. Anything less creates a level of risk that is neither acceptable nor necessary.

This situation would be likely to endure for some time. The CRTC recently established a hard date of August 31, 2011 for clearing the band of analog broadcast operations.[57] Meanwhile, New York State and other public safety agencies along the border with Canada are beginning to deploy narrowband communications systems now and more are planned in the fourteen Canadian-border states. Pending completion of Canada's transition of broadcasters from channels 64 and 69 (over four years from today, assuming there are no delays in the Canadian transition), emergency communications of public safety agencies in regions along the border with Canada will be walled off from those of their counterparts in other parts of the country – indeed, even in other parts of their own states."

The situation is even more problematic along the U.S. border with Mexico. Mexican television broadcasters currently operate in the border regions on both channels

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[57] *See* CRTC 2005-53 ¶ 61, *supra* note 6.

[58] Extending the temporary easement to encompass the entire country, in an effort to account for the border regions, is fraught with additional peril. Once the DTV transition occurs, all 700 MHz radios in use would have to be programmed to the temporary interoperability channels within television channels 63 and 68. Then, once the Canadian and Mexican broadcasters are cleared, all of the public safety narrowband radios nationwide would need to be re-tuned to new permanent interoperability channels within television channels 64 and 69. The radios needing to be re-tuned would not only be all the 700 MHz-only radios but all of the dual-band 700/800 MHz radios which will number in the millions. The costs to retune that many radios and the logistics of the retuning would present enormous challenges. For example, in order to maintain nationwide interoperability while all of the radios are transitioned, the radios first would need to be re-tuned with both the temporary interoperability channels and the new permanent interoperability channels. Once all of the radios had been re-tuned to accept the permanent interoperability channels, all of the radios would need to be re-tuned again to have the "temporary" interoperability channels removed so that public safety and commercial broadband systems were not affected.

63 and 64.[59] The agreement governing the sharing of the 700 MHz spectrum along the U.S.-Mexican border does not include *any* statement of intent to vacate this spectrum of Mexican broadcast operations. It would be hard to characterize the Commission's proposed easement as interim when Mexico has not even expressed an intention to vacate these channels, much less a time line to do so.

Further, under any temporary easement proposal the difficulties would continue after the Canadian and Mexican television broadcasters have been cleared. At that time, public safety agencies would face additional transition difficulties and expenses. All of the affected public safety agencies would be forced to retune not only their interoperability channels, but also their entire narrowband systems since they would need to shift 1 MHz over into their permanent locations. Once again, the costs of these changes and the logistics of making this shift while maintaining ongoing operations would be daunting. Moreover, these public safety agencies will have to make adjustments to operate their broadband systems on different frequencies, as well. Clearly, the financial and logistical challenges would make it prohibitively difficult for public safety to achieve nationwide interoperability under Band Plans 1 and 2 before channels 64 and 69 are cleared of Canadian and Mexican television broadcasting operations.

The easement proposal also would create severe problems for commercial licensees. The easement discussed in the *Further Notice* seems to differ markedly from the spectrum easements previously considered by the Commission. The Commission

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[59] *See* U.S.-Mexico Protocol, *supra* note 7. Although Mexican broadcast operations are permitted on channels 68 and 69, our research uncovered no Mexican television broadcast stations operating on those channels along the U.S./Mexico border.

considered the use of spectrum easements as a mechanism for increasing access to spectrum in rural areas." Its use of the term "easement" referred to "government-defined access rights to licensed spectrum that would not require the easement user to obtain the prior consent of the licensee so long as the user complied with the easement conditions, *e.g.*, non-interference with the licensee's use of the spectrum.""[61] In the instant proceeding, the Commission does not propose that public safety agencies would exercise their easements on a secondary basis, *i.e.*, subject to the primary rights of the commercial licensee.[62] Because the plan's stated goal is to "facilitate the full 5 megahertz bandwidth of the proposed public safety broadband allocation," Public Safety's rights to operate on the commercial spectrum would appear to preclude or take precedence over commercial operations on that spectrum.[63]

Denying commercial licensees the use of some of their spectrum for an indefinite period of time would cloud their spectrum rights. This would affect the willingness of auction participants to bid for the spectrum and would influence the prices they are

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[60] *Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services; 2000 Biennial Regulatory Review – Spectrum Aggregation Limits for Commercial Mobile Radio Services; Increasing Flexibility to Promote Access to and the Efficient and Intensive Use of Spectrum and the Widespread Deployment of Wireless Services, and to Facilitate Capital Formation*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 19078, ¶ 40 (2004).

[61] *Id.* ¶ 40 n. 113 (citations omitted).

[62] Indeed, aggressive build-out requirements are proposed for the commercial bands so that the 700 MHz commercial spectrum will be used intensively and quickly. *Further Notice* ¶¶ 212-220. Consequently, unused commercial spectrum is not likely to be plentiful. Affording public safety agencies merely secondary use to the commercial spectrum would not provide them with any meaningful access to additional spectrum for broadband use.

[63] The *Further Notice* also asks whether the commercial licensee should "be allowed to operate on a secondary basis within the easement spectrum, or not at all." *Further Notice* ¶ 189.

willing to pay. Moreover, the commercial block for which the easement is proposed is 6 MHz.[64] By imposing a 1 MHz easement within that block, the Commission effectively makes only 5 MHz paired available for commercial broadband operations in international border regions for an indefinite period of time. This reduction in the size of the commercial spectrum block undermines the basis for creating a block of 6 MHz paired in the first instance. Access Spectrum and Pegasus have demonstrated the advantages of spectrum building blocks that are larger than 5 MHz pairs.[65] The limitations in international border regions caused by the easement proposal would foreclose those advantages and unnecessarily restrict broadband technology choices. Finally, under Band Plans 1 and 2, the 2 MHz paired adjacent to Public Safety is already held by commercial licensees (the current B Block licensees) in 15 percent of the country. Two of those outstanding licenses are located in border regions. Those licenses were acquired at auction with the understanding that the licensee would be in a position to make use of the entire spectrum allocation. The Commission may not modify those licenses with an easement overlay that prohibits their commercial use without the assent of the licensees?

The inadequate definition of the rights and responsibilities under the proposed easement worsens matters. The easement proposed by the Commission is ill-defined.

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[64] As explained in further detail below, under Band Plans 1 or 2, the commercial D or E Block licensee would confront the daunting task of deploying a network pursuant to stringent build-out requirements with 6 MHz paired in parts of the country, 5 MHz paired in border regions, and 4 MHz paired in the 15 percent of the nation where the B Blocks were grandfathered.

[65] *See* Access Spectrum/Pegasus Sept. 29 Comments at 11-23; *see also* Declaration of Dr. Paul J. Kolodzy, Attachment B to Access Spectrum/Pegasus Sept. 29 Comments ("Kolodzy Decl.").

[66] As explained below, the easement proposal would involve the risk of litigation (potentially delaying the auction). *See* Section II.B.1.b, *infra*.

The Commission does not describe the conditions of the easement (for example, whether the commercial licensee's build-out requirements would be tolled during the period of the easement) nor does the Commission provide any certainty on the duration of the easement (indeed, it cannot provide any certainty as to the easement's duration because the clearance of Canadian and Mexican TV broadcasters from channels 64 and 69 is beyond the Commission's control). The lack of clear rights and responsibilities is highly problematic, particularly given the impending auction.

The ability of public safety agencies in international border regions to enjoy complete narrowband voice interoperability with public safety agencies in other parts of the country should not and need not be sacrificed to consolidate public safety narrowband spectrum. To ensure the goal of interoperability in U.S. international border regions, public safety interoperability channels must be established on channels 63/68 and 64/69 not just in the border regions, but throughout the United States. By doing so, at least one of the two sets of interoperability channels would be available in all border regions (as well as in the rest of the country), and all public safety agency radios nationwide would be capable of interoperable narrowband communications on these frequencies. The easement approach fails to solve the border issue because it does not allow this approach. As a result, Band Plans 1 and 2 clearly do not satisfy the preconditions that Public Safety and the Commission had set forth for consolidation of the public safety narrowband spectrum.

The shortcomings of the easement approach are magnified by the presence of the alternative proposed by Access Spectrum and Pegasus and supported by all the Upper 700 MHz Licensees which: (1) permits permanent and immediate interoperability for all

public safety agencies nationwide;[67] (2) avoids the imposition of additional transition costs and difficulties for public safety agencies; (3) allows complete and full use of all commercial spectrum by commercial licensees without delay; and (4) accomplishes all modifications to the commercial allocation with the assent of existing licensees. It would be extremely regrettable if there were to be a major emergency in the international border regions and public safety interoperability was either impossible or severely hampered because of the adoption of a 700 MHz band plan that clearly would not work for Public Safety, particularly given that the Commission is presented with an alternative that so clearly does work.

b. Legal Issues Stemming from the Easement Proposal

The Commission tentatively posits that

> it would be contrary to Congress' intent in enacting Section 337 to consider modifying the commercial and public safety allocations in the band at this time, before the licensees have had a meaningful opportunity to use unencumbered spectrum as initially envisioned (an opportunity that is unlikely to be fully available before the end of the DTV transition in 2009).[68]

The Upper 700 MHz Licensees believe that this reading of the statute is unnecessarily restrictive.[69] However, the rationale that Section 337 bars the Commission from reallocating already-auctioned commercial spectrum to public safety use (and thereby

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67 The solution to the international border issue is complicated and was carefully developed through a long and collaborative process. The details are described in the First Report of the Technical Working Group, a report that public safety community representatives have endorsed. *See* First TWG Report; *see also* Letter from Vincent R. Stile, Chair, National Public Safety Telecommunications Council, to Marlene H. Dortch, FCC Secretary, WT Docket Nos. 96-86 and 06-169 (Dec. 6,2006, filed Dec. 7,2006).

68 *Further Notice* ¶ *230*.

69 *See infra* Appendix B, Section B.

prohibits the BOP) until licensees have a meaningful opportunity to use unencumbered spectrum would also seem to prohibit imposing an easement on commercial spectrum that would permit only public safety use. The Farther Notice does not provide a reasoned basis for distinguishing the Commission's authority under the two approaches. If the Commission did not possess the legal authority to adopt the BOP despite the fact that the BOP would advance the agency's prime directive to manage spectrum in a manner that promotes the safety of life and property, presumably it would also lack the legal authority to adopt this temporary easement, especially given its disastrous consequences for Public Safety, which would directly imperil that prime statutory directive.[70]

The easement element of Band Plans 1 and 2 also raises a substantial risk of litigation. One sixth of the spectrum allocated to the new D Blocks and one half of the spectrum allocated to the grandfathered B Blocks, which are adjacent to the public safety band, would be overtaken by the public safety easement and commercial use of that spectrum would be proscribed for an indefinite duration.[71] This approach would be vulnerable to litigation.

2. Band Plans 1 and 2 Do Not Provide a Funding Mechanism

Public safety agencies have been consistently clear that they should not be saddled with the costs associated with consolidating the public safety narrowband spectrum and the Commission has indicated that any proposal to reconfigure the public

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[70] See 47 U.S.C. § 151.

[71] Indeed, it is conceivable that the easement's duration could outlast the original term of the servient spectrum license.

safety band in this manner must address the issue of funding.[72] Band Plans 1 and 2 do not include a mechanism to pay for the expenses of consolidating public safety narrowband spectrum, such as radio retuning and making changes to the CAPRAD database.

Further, while it may be possible to develop a funding mechanism for relocating those existing public safety systems that would require relocation, the uncertain details and duration of the proposed easement make it extremely difficult to estimate how much funding would be needed (and when it would be needed). The lack of a funding mechanism and the indeterminate costs mean that Band Plans 1 and 2 would fail to satisfy either of the two conditions established by public safety for agreeing to the consolidation of its narrowband allocation: the plans would fail to provide interoperability in international border regions (condition number one) and they would not relieve public safety agencies of the costs of reconfiguring the spectrum (condition two). Finally, the eventual spectrum shift contemplated as part of the easement proposal would create logistical challenges that would be extremely difficult if not practically

[72] *See Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission's Rules; Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010*, WT Docket Nos. 96-86 and 06-169, Notice of Proposed Rulemaking, 21 FCC Rcd 10413, ¶ 46 (2006) ("700 *MHz Guard Bands Notice")* ("We agree with commenters to the *Public Safety Notice* that the potential costs of moving the narrowband channels and reprogramming existing 700/800 MHz public safety radios, as well as the possible need to negotiate amended or new agreements with Canada and Mexico, are significant issues that would have to be resolved before the Commission could adopt a channel plan that shifts the narrowband channels. We also share the commenters' concern that consideration of changes to the narrowband allocation could cause delay in the planning, funding and deployment of public safety systems pending Commission deliberations. We tentatively conclude, therefore, that it would not be appropriate to engage in any shifting of the narrowband channels in the 700 MHz public safety band unless these issues are resolved expeditiously." (footnote omitted)).

impossible to solve. Band Plans 1 and 2 do not make Public Safety's interests a priority and they should be rejected.

3. Grandfathering the B Block

Band Plans 1 and 2 "would grandfather the remaining B Block licenses by allowing them to continue to operate in this spectrum under current rules."[73] This component of the plans worsens an already suboptimal approach. Grandfathering the existing B Block licenses would create a "Swiss cheese" problem for the licensee holding the 6 MHz adjacent to Public Safety (the D Block under Band Plan 1 and the E Block under Band Plan 2). The D or E Block licensee would have only 4 MHz of spectrum in approximately 15 percent of the country, 5 MHz in the border regions, and 6 MHz of spectrum in the remainder of its licensed geography. The lack of block size uniformity nationwide would make it difficult to adopt a nationwide or regional network. The availability of only 4 MHz would preclude the technologies that require 5 MHz and would limit commercial broadband deployment options in 15 percent of the country.

For example, suppose the Commission adopts Band Plan 1 and an operator intends to deploy a wireless broadband network in the southern Mid-West and therefore bids for and wins the D Block for REAG 5 or the licenses that make up REAG 5. In this case, the winning bidder would have a 6 MHz pair in MEA 31 (Houston), MEA 33 (Denver), MEA 37 (Oklahoma City) and in parts of MEA 32 (Dallas) and MEA 40 (Phoenix). The winning bidder would have only 5 MHz paired in MEA 38 (San Antonio) and parts of MEA 32 (Dallas) and MEA 40 (Phoenix) because these geographies border Mexico and would be subject to the easement until Mexican TV broadcast operations

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[73] *Further Notice* ¶ 186.

were cleared from TV channels 63 and 64, something Mexico has not expressed an intention of doing. Finally, the winning bidder would have only a 4 MHz pair in MEA 34 (Omaha), MEA 35 (Wichita) and MEA 39 (Albuquerque-El Paso) because those MEAs are held by existing B Block licensees. Thus, this operator would be required to deploy a technology that could shift among 4, 5 and 6 MHz pairs depending on the geography.

If the Commission were to adopt Band Plan 1 or 2 and grandfathered existing B Block licenses as proposed in the *Further Notice*, public safety agencies in border areas would be confronted with the following severe problems: they would not have interoperability; all public agencies would be saddled with larger and unknown spectrum reconfiguration costs; and the B Block would remain unusable for broadband operations, impairing the full potential for public/private partnerships.[74] The adoption of Band Plan 1 or 2 would also negatively affect the commercial licensees adjacent to the B Block (the D or E Block licensees) because they would have only 4 MHz of paired spectrum in 15 percent of the nation thereby limiting deployment options for broadband technologies that require 5 MHz pairs (or limiting the number of channels available for technologies using less than 5 MHz pairs). Band Plans 1 and 2 create significant problems for commercial operators and therefore the Commission should dismiss these options as inferior plans that do not promote the public interest.

[74] *See* Comments of Access Spectrum, LLC and Pegasus Communications Corporation, PS Docket No. 06-229 and WT Docket No. 96-86, at 7-8 (Feb. 26,2007) (explaining the importance of locating commercial and public safety broadband operations on adjacent spectrum) ("Access Spectrum/Pegasus Public Safety 9th NPRM Comments").

C. Changes If the Commission Retains the Current Band Plan

The *Further Notice* seeks comment on changes that should be made to Upper 700 MHz A and B Blocks if it retains the current Upper 700 MHz band plan.[75] The Upper 700 MHz Licensees strongly believe that the public interest warrants changes to the current band plan. However, in an effort to respond to the Commission's inquiry,[76] the Upper 700 MHz Licensees offer the following recommendations.

If the Commission retains the current band plan, it should harmonize the rules governing the Upper 700 MHz A and B Blocks with those governing the Upper 700 MHz C and D Blocks, wherever possible. Under current rules, the Upper 700 MHz C and D Blocks are subject to a number of technical requirements, including limitations on out-of-band emissions ("OOBE''), antenna height, and transmission power. Public safety narrowband operations under the current band plan are separated from the C and D Blocks by a minimum of 1 MHz of spectrum (the A and B Blocks). C and D Block licensees are not subject to either the cellular architecture prohibition or Adjacent Channel Power ("ACP") restrictions.

If the Commission retained the current band plan but consolidated public safety narrowband spectrum at the top of the public safety 700 MHz allocation, all 700 MHz commercial spectrum, with the exception of the upper A Block at 776-777 MHz, would be situated similarly to the current C and D Blocks. Public safety narrowband operations at the upper end of the public safety allocation would be separated from adjacent commercial spectrum by the 1 MHz A Block Guard Band. As a result of the separation

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[75] *Further Notice* ¶¶ 244,245. The Commission sought comment on these issues in the 700 *MHz Guard Bands Notice*, as well. *See* 700 *MHz Guard Bands Notice* ¶¶ 25-35.

[76] *See Further Notice* ¶ 243.

between public safety narrowband operations and commercial operations, the same rules applied to the C and D Blocks could be applied to all of the commercial spectrum in the 700 MHz band (again, with the exception of the upper A Block at 776-777 MHz). The cellular architecture prohibition and ACP limits, designed for the current band plan in which the A and B Blocks serve as guard bands for public safety narrowband operations, would no longer be necessary. Therefore, the Upper 700 MHz Licensees support the proposal to allow B Block licensees to deploy cellular systems if they deploy low-site, low-power system architectures.[77] The Commission also should harmonize the rules of the lower A Block (746-747 MHz) with the rest of the Upper 700 MHz band (*i.e.*, eliminate the cellular architecture restriction and the ACP restrictions).

Finally, the Commission should eliminate the stringent coordination requirements for the Guard Bands (except for the upper A Block at 776-777 MHz).[78] In its recent *Report and Order*, the Commission declined to change the coordination requirements for Guard Band licenses, explaining that the "primary purposes of the Guard Bands is to prevent interference to adjacent public safety operations" and that the requirements should be retained "[a]bsent information indicating that our coordination requirements do not serve to prevent interference."[79] After the Commission consolidates the public safety narrowband spectrum at the top of the public safety 700 MHz allocation, the coordination requirements in spectrum blocks 746-747 MHz, 762-764 MHz, and 792-794 MHz will no longer serve their purpose of preventing interference to adjacent public safety operations.

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77 *Further Notice* ¶ 244.

78 47 C.F.R. § 27.601(c)(1).

79 *Further Notice* ¶ 168.

Situated as it is between two commercial blocks, the lower A Block (at 746-747 MHz) requires no special coordination rules. Even if the Commission determines that the existing coordination rules should continue to apply to the upper A Block, there is no rationale for applying the same rules with respect to the lower A Block. The Commission's order reflects that the coordination rules were intended for the benefit of Public Safety users, as when the Commission wrote "[w]e believe that it is a procedure that is an essential requirement for Guard Band users because of the fact that such users are operating on spectrum immediately adjacent to 700 MHz public safety licensees."[80] Continuing the requirement could even invite rivalrous opportunism by the adjacent commercial licensees, whom the coordination requirement was never intended to benefit. Therefore, these requirements should be lifted for the three spectrum bands specified above.

III. INTERFERENCE CONCERNS

The BOP has been subject to a thorough technical review by the 700 MHz Technical Working Group that included public safety representatives, manufacturers, and other commercial entities. Their conclusions are set forth in the Second TWG Report and were based on technical analysis and simulations of the type that are routinely used in system architecture development for avoiding undue interference. The Second TWG Report concluded that there are no technical issues remaining that would prevent

[80] *Upper 700 MHz Second R&O* ¶ 18.

adoption of the BOP by the FCC.[81] No similarly thorough technical analyses were submitted on the record to the FCC refuting the TWG's conclusions about the BOP.

The *Further Notice* nevertheless indicates concerns that "the BOP could result in interference between the 700 MHz Band public safety and commercial operations."[82] The *Further Notice* also seeks comment on interference concerns raised by Verizon Wireless with respect to the BOP.[83] Verizon Wireless raised several interference concerns in the letter cited by the *Further Notice*.[84] Access Spectrum and Pegasus comprehensively addressed each of those concerns,[85] and NPSTC similarly concluded, after independent analysis, that "[t]he Verizon objection should be rejected."[86] Further, many of those interference issues were also addressed in detailed fashion by the 700 MHz Technical Working Group in its Second Report. The adoption of the BOP or Band Plan 3 (which mimics the interference conditions of the BOP) would improve the interference conditions for Public Safety and, at worst, would have no effect on the interference

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[81] Second TWG Report at 2, 7. Band Plans 3, 4 and 5 mimic the BOP in all pertinent respects and the technical analysis of the BOP would be largely applicable to Band Plans 3, 4 and 5.

[82] *Further Notice* ¶ 227.

[83] *Id.* ¶ 240.

[84] *See* "The 700 MHz Guard Bands Are Essential to Stop Potential Interference to Public Safety and Commercial Licensees" ("Verizon Wireless Paper"), attached to Letter from Donald C. Brittingham, Director – Spectrum Policy, Verizon Wireless, to Marlene H. Dortch, FCC Secretary, WT Docket No. 06-169 (Feb. 15,2007).

[85] *See* Letter from Michael Gottdenker, Andrew Rein, Ruth Milkman and Kenneth Boley on behalf of Access Spectrum, LLC and Marshall Pagon, Cheryl Crate, and Kathleen Wallman on behalf of Pegasus Communications Corporation, to Marlene H. Dortch, FCC Secretary, WT Docket No. 06-169 (Feb. 28,2007) ("Access/Pegasus Feb. 28, 2007 Letter").

[86] Letter from Vincent R. Stile, Chair, National Public Safety Telecommunications Council, to Marlene H. Dortch, FCC Secretary, WT Docket Nos. 06-169, 96-86, and 06-150, and PS Docket No. 06-229, at 3 (Feb. 23,2007) *("NPSTC Feb. 23, 2007 Letter").*

conditions of the commercial allocation. There has been no technical presentation made to rebut the detailed technical presentations made by Access Spectrum, Pegasus, and the 700 MHz Technical Working Group. In addition, the public safety community endorsed the BOP and the work of the 700 MHz Technical Working Group.[87] The record demonstrates that conditions for Public Safety under the BOP would represent a significant improvement to its existing conditions.[88]

The Upper 700 MHz Licensees briefly discuss here the Upper C Block interference issue, identified specifically in the *Further Notice*, and then address the Upper C Block/Lower C Block interference issue raised in the Verizon Wireless Paper and in a recent submission by Alcatel-Lucent.[89] These concerns are relevant to a discussion about the BOP, but also are important when considering the merits of Band Plan 3.

A. The 776 MHz Interface

As an initial matter, it should be noted that the bands located at 775-776 MHz and 805-806 MHz would be the B Blocks under Band Plan 3, and they would not be allocated to public safety use. Hence, concerns regarding the potential interference that might

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[87] *See, e.g.* ,*NPSTC Feb. 22, 2007 Letter; see also* Letter from Wanda McCarley on behalf of the Association of Public-Safety Communications Officials-International, Alan Caldwell on behalf of the International Association of Fire Chiefs, and Harlin McEwen on behalf of the International Association of Chiefs of Police, the Major Cities Chiefs Association, the Major County Sheriffs' Association and the National Sheriffs' Association, to Fred Campbell, Chief, Wireless Telecommunications Bureau, FCC, WT Docket Nos. 96-86 and 06-169 (March 8,2007).

[88] Similarly, interference conditions for Public Safety under Band Plan 3 also would represent a significant improvement to existing conditions.

[89] Letter from Michael McMenamin, Senior Manager, Alcatel-Lucent, to Marlene H. Dortch, FCC Secretary, WT Docket Nos. 96-86 and 06-169 and PS Docket No. 06-229 (April 6, 2007) ("A-L MAPS Letter").

result if this spectrum were used for public safety operations are not relevant to Band Plan 3. However, even if the Commission does not adopt the BOP, it still may determine at some time in the future that the B Block would be well-suited for reallocation to public safety use, with the lower band used as an internal guard band for Public Safety, similar to the manner in which it would have been allocated by the BOP. Therefore, the Upper 700 MHz Licensees explain why concerns about interference at the 776 MHz interface are unfounded.

The *Further Notice* states that, "Verizon is concerned that public safety operations deployed in the internal guard band at 775-776 MHz would receive interference from operations in the adjacent C Block."[90] The out-of-band emissions rules proposed by the 700 MHz Technical Working Group explicitly provide that if Public Safety operates in the 775-776 MHz internal guard band, those operations would have to accept interference to the same extent as do current commercial guard band licensees.[91] Access Spectrum and Pegasus have explained that, even with this limitation, allocating the 775-776 MHz spectrum to an internal Public Safety guard band would improve Public Safety's ability to avoid interference.[92] Currently, public safety narrowband operations are directly adjacent to commercial operations in the A Block. Under the BOP, public safety narrowband operations would be separated by at least 1 MHz from *all* commercial operations, because the 1 MHz guard band would be within the public safety allocation. As a result of controlling the guard band, Public Safety would be able to leave that 1

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90 *Further Notice* ¶ 240.

91 *See* Second TWG Report, Appendix B (proposed OOBE rules); *see also* Access/Pegasus Feb. 28,2007 Letter at 8-9.

92 *See* Access/Pegasus Feb. *28,2007* Letter at 9.

MHz entirely unused, something that it cannot do today because the A Block is licensed to others for commercial purposes.[93] But even if Public Safety were to choose to use that 1 MHz of spectrum, the 700 MHz Technical Working Group has made clear that any such use would be protected from interference only to the extent that commercial operations in the Upper 700 MHz band are protected,[94] and Public Safety has accepted that view.[95]

The use of the 775-776 MHz spectrum as a guard band internal to Public Safety would not impose changes on commercial operators at the 776 MHz interface.[96] Under the current band plan, commercial operations in the C Block (777-782 MHz) must attenuate base transmitter power (P) by at least 76 + 10 log (P) dB inside public safety narrowband Spectrum, which begins at 776 MHz.[97] In other words, C Block operators must apply filters and take other steps to ensure that the power of the signal generated in the C Block is attenuated to the required level in spectrum only 1 MHz away from the C Block's nearest edge. Under the BOP, both the required level of attenuation inside public

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[93] Public Safety would likely use the 805-806 MHz block for simplex talk-around purposes that are critical in emergency situations, leaving its "pair" vacant. *See* Access/Pegasus Feb. 28, 2007 Letter at 9; *see also* First TWG Report at 4-5.

[94] Second TWG Report, Appendix B.

[95] *See* ***NPSTC*** *Feb. 22 Letter;* ***NPSTC*** *Feb. 23 Letter* at 2. Some parties may be concerned that public safety operations in the 775-776 MHz band would receive additional protections beyond those afforded to commercial operations, but public safety representatives have made it clear that they understand the limitations on interference protection for operations in that spectrum. However, in an effort to alleviate these concerns, the Commission could clarify that if public safety operations are deployed in this spectrum, they will not receive preferential interference protection.

[96] *See* Access/Pegasus Feb. 28, 2007 Letter at 9-10.

[97] 47 C.F.R. § 27.53(c)(3). Mobile transmitter power (P) must be attenuated by at least 65 + 10 log (P) dB inside public safety narrowband spectrum. 47 C.F.R. § 27.53(c)(4).

safety spectrum (76 + 10 log (P)) and the amount of spectrum within which that level must be reached (1 MHz) would be the same as under current rules.[98] That 1 MHz separation would be an internal public safety guard band that would receive no greater protection from interference than would operations in the flexible use commercial spectrum. C Block systems under the BOP would be free to operate at 776 MHz just as they would under the current rules.[99]

B. The 746 MHz Interface

In the context of the BOP, Verizon Wireless and Alcatel-Lucent raised concerns about the removal of the A Block currently located at 746-747 MHz between the Lower 700 MHz C Block and the Upper 700 MHz C Block."' Band Plan 3 is similar to the BOP in the sense that the Lower 700 MHz C Block would be immediately adjacent to the Upper 700 MHz C Block at 746 MHz. As Access Spectrum and Pegasus have explained on numerous occasions,[101] and as others have confirmed,[102] the maintenance of a 1 MHz

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98 *See* Second TWG Report, Appendix B.

99 If the B Block licenses were to be re-auctioned for commercial use as part of Band Plan 3, these licenses should be required to comply with guard band rules. *See Further Notice* ¶¶ 243-245 (seeking comment on changes to guard band rules). This would maintain the interference conditions that currently exist for the adjacent C Block licensees.

100 CTIA also raised this issue for consideration in its Guard Band rulemaking Comments. *See* Comments of CTIA – the Wireless Association, WT Docket No. 06-169, at 4 (Oct. 23,2006). Access Spectrum and Pegasus addressed the issue in their reply comments. *See* Access Spectrum/Pegasus A/B Reply Comments at 16-18.

101 *See* Access Spectrum/Pegasus A/B Reply Cormnents at 16-18; *see also* Access Spectrum/Pegasus Feb. 28,2007 Letter; Letter from Michael Gottdenker and Ruth Milkman on behalf of Access Spectrum, LLC and Marshall Pagon and Kathleen Wallman on behalf of Pegasus Cormnunications Corporation, to Marlene H. Dortch, FCC Secretary, WT Docket Nos. 96-86, 06-150 and 06-169, at 9-10 (March 21,2007) ("Access Spectrum/Pegasus March 21,2007 Letter").

102 Motorola submitted an *ex parte* presentation indicating that the loss of the 1 MHz buffer between the Upper 700 MHz C Block and the Lower 700 MHz C Block would be

buffer between the Lower 700 MHz C Block and the Upper 700 MHz C Block is not necessary to prevent interference between operations in the two blocks.

Nevertheless, Band Plan 3 should resolve concerns about interference at the 746 MHz interface. Under Band Plan 3, the Upper 700 MHz C Block would have 11 MHz of paired spectrum. Any licensee that disagreed with our interference analysis could maintain a 1 MHz buffer between its operations and the Lower 700 MHz C block while still leaving 10 MHz of paired spectrum for use.[103] Other potential licensees that do not believe a 1 MHz buffer is required to prevent undue interference at the 746 MHz interface could make use of the 11 MHz paired of spectrum capacity, without dedicating 1 MHz as a buffer.[104] In any case, it makes little sense to arbitrarily designate 1 MHz of spectrum as "guard band" spectrum for control by a third party. Instead, the responsibility for maintaining interference protection is best managed by the operators

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unlikely to increase the potential for interference. See Letter from Steve B. Sharkey, Director, Spectrum and Standards Strategy, Motorola, to Marlene H. Dortch, FCC Secretary, WT Docket Nos. 96-86, 06-150 and 06-169, Attachment at 13 (March 5, 2007).

[103] Band Plans 4 and 5 would have a 500 kHz "built-in" guard band for those that have these concerns. Although we believe these concerns are unfounded, the Commission could alter Band Plans 4 and 5 to create a 6 MHz paired C Block and a 5 MHz paired D Block alongside the 5 MHz paired E Block. Interestingly, this would create two possibilities to aggregate into an 11 MHz pair through the combination of the C and D Blocks or the combination of the D, E and A Blocks. This could be achieved through the auction, through the secondary markets or through the use of nationwide "cross-block', packages as proposed by the Coalition for 4G in America. Note that the A and E Blocks could be consolidated independent of the D Block through the adoption of the "option variant" described in Appendix A, thereby creating a 6 MHz paired C Block, a 5 MHz paired D Block, and a 6 MHz paired E Block in the Upper 700 MHz band.

[104] The endorsement of Band Plan 3 by the 4G Coalition signals an understanding by coalition members DirecTV, EchoStar, Google, Intel, Skype, Yahoo! and Access Spectrum that the removal of the A Block from 746-747 MHz would not degrade interference conditions between the Upper 700 MHz C Block and the Lower 700 MHz C Block. See Comments of the Coalition for 4G in America, WT Docket Nos. 06-150, 06-169, and 96-86 and PS Docket No. 06-229 (May 23,2007).

themselves, which gives licensees the incentives to solve any problems in the most cost-effective and spectrally efficient manner possible.

Alcatel-Lucent claims, without supporting citation, that the Commission designated the lower segment of the A Block to fulfill the role of preventing interference between Lower C Block and Upper C Block communications.[105] This is incorrect. The Commission did not establish the A Block at 746-747 MHz in order to prevent interference *to commercial spectrum*. Previous FCC orders make it clear that the Commission did not create a guard band to separate the Lower 700 MHz C block from the Upper 700 MHz C block at 746-747 MHz, but instead placed the lower segment of the A Block at 746-747 MHz "to allow for a paired block" with the upper segment of the A Block at 776-777 MHz. Further, the *Upper 700 MHz Second R&O* acknowledges that the lower portion of the A Block is not required as a guard band when it notes that "[t]he 746-747 MHz band is not immediately adjacent to a public safety band. However, because it is paired with the 776-777 band, which *is* one of the bands situated immediately adjacent to a public safety band, we include the 746-747 MHz band as one of the four Guard Bands to be addressed in this proceeding."[106] It is the upper segment of the A Block at 776-777 MHz, and only the upper segment of the A Block, that the FCC intended as a guard band in order to provide a 1 MHz buffer between the commercial C Block and the adjacent public safety spectrum.[107]

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[105] A-L MAPS Letter, Appendix **A** at 3-4.

[106] *Upper 700 MHz Second R&O* ¶ 9 n.20.

[107] *Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules*, First Report and Order, 15 FCC Rcd 476,134 (2000) (establishing A Block of 1 MHz paired as guard band "in order to protect the immediately adjoining public safety licensees on Channels 63, 64, 68, and 69 from harmful interference."); *see also Upper 700 MHz Second R&O* ¶ 9 n.20; Access

The removal of the A Block guard band at 746-747 MHz would not change the Lower 700 MHz C Block licensee's requirement to abide by its obligations to protect its commercial neighbor at 746 MHz. Current rules contemplate high-power, high-site operations in the Lower 700 MHz band, subject to a power flux density ("PFD") limitation.[108] The Commission developed the PFD standards to minimize the likelihood of interference from commercial high-power operations into adjacent low-power operations, whether those low-power operations are deployed in the Lower 700 MHz B Block or the Upper 700 MHz A Block.[109] The Commission concluded that its PFD standards would ensure that any out-of-band interference from high-power operations in the Lower C Block to adjacent low-power systems would be no greater than that received from adjacent low-power operations.[110] No commenters have provided a technical

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Spectrum/Pegasus March 21,2007 Letter at 10; Access/Pegasus Feb. 28,2007 Letter at 6.

[108] In the Lower 700 MHz band, base and fixed stations are permitted to have power levels above 1 kW, not to exceed 50 kW ERP. Such high-power stations are not subject to specific height restrictions, but they must comply with a PFD limitation of 3,000 microwatts per square meter on the ground within 1 kilometer from the antenna. 47 C.F.R. §§ 27.50(c), 27.55(b). Thus, Lower 700 MHz operations may also be high-power, high-site, as long as they comply with the PFD limitation. Both the Upper and Lower 700 MHz C Blocks are subject to the same out-of-band emissions limits under current rules. 47 C.F.R. § 27.53(c).

[109] *See Reallocation and Service Rulesfor the 698-746 MHz Spectrum Band (Television Channels 52-59),* Report and Order, 17 FCC Rcd 1022, ¶¶ 104-106 (2002) ("*Lower 700 MHz R&O*"); *see also Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59),* Memorandum Opinion and Order, 17 FCC Rcd 11613, ¶ 22 (2002) (explaining that when fashioning the Lower 700 MHz rules, "we devoted considerable discussion to the possibility of harmful interference from 50 kW ERP operations to systems on adjacent channels operating at lower power levels . . . . [W]e evaluated fully the potential impact of 50 kW transmissions on operations in the Upper 700 MHz Band, including users of spectrum licensed to guard band managers on 746-747 MHz.") (*"Lower 700 MHz MO&O*").

[110] *See Lower 700 MHz MO&O* ¶ 22-31; *see also* 47 C.F.R. §§ 27.50(c), 27.55(b) (fixed and base transmissions in the Lower 700 MHz C Block may have a higher power

argument to refute the Commission's considered analysis. Alcatel-Lucent does proffer two scenarios in which it contends the A Block would be useful in protecting the Upper 700 MHz C Block, but its claims rest on the fundamentally flawed assumption that the A Block must accept interference from commercial operations, even if that interference need not be tolerated by Upper and Lower 700 MHz C Block licensees.[111] The A Block guard band must extend special protections to the public safety narrowband allocation, but it does not have any fewer rights to protection from interference from its commercial neighbors than any other licensed block of commercial spectrum. The Lower 700 MHz licensee has obligations to protect the Upper 700 MHz A Block licensee at 746 MHz. If, as Alcatel-Lucent suggests, the only way to deploy certain technologies is to emit signals into the A Block that would interfere with A Block operations, that approach is prohibited by the Commission's rules and is not an acceptable deployment strategy.

Further, Alcatel-Lucent does not explain why the interface between the Upper 700 MHz C Block and the Lower 700 MHz C Block is unique or different from the interface between any other two commercial spectrum blocks. If Alcatel-Lucent were correct,

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level (between 1,000 watts and 50 kW ERP) as long as such transmissions do not exceed a PFD of 3,000 microwatts per square meter on the ground in an area extending 1 kilometer from the base of the antenna mounting structure). In other words, the PFD requirement would result in "PFD levels that are no greater than the PFD levels that would ordinarily occur from stations operating at" low power. **See** *Lower 700 MHz R&O* ¶104.

[111] **See** A-L MAPS Letter, Appendix at 3-5. Alcatel-Lucent's misunderstanding of the rights of the current A Block licensees is made plain when it notes that the "A Block guard band is not required for interference protection between the Lower C and the Upper C if mobile technologies deployed in each of these blocks use the spectrum as downlink blocks." *Id.* at 4 n.31. The implication that the A Block ***is*** needed for interference protection in certain circumstances is wrong. Operations in the A Block have the same right to protection from interference as operations in the Upper 700 MHz C Block license. Any suggestion that the role of the A Block is to act as a buffer for the larger Upper 700 MHz C Block licensee is wholly without merit and should be rejected.

which it is not, in perceiving the need for a 1 MHz guard band controlled by a third-party and subject to more stringent technical rules, then guard bands would need to be established between each one of the commercial blocks in the Upper and Lower 700 MHz bands, especially at the interfaces between the Lower 700 MHz C and D Blocks and the Lower 700 MHz E and A Blocks, which have identical interference scenarios at their band edges.

The current combination of out-of-band emissions and PFD limits provides the Upper 700 MHz C Block with similar "near-far" protection from high-power, high-site transmissions from the Lower 700 MHz C Block to that which already exists with regard to all transmissions from operations in the Upper 700 MHz A Block or Upper 700 MHz D Block. Current rules also contemplate low-power, low-site broadband operations, both FDD and TDD, in both the Upper 700 MHz band and the Lower 700 MHz band.'[12] Thus, low-power, low-site operations in the Upper 700 MHz C Block would pose no greater risk of interference to the Lower 700 MHz C Block than already exists under current rules from adjacent operations in the Lower 700 MHz B Block. Similarly, low-power, low-site operations in the Lower 700 MHz C Block would pose no greater risk of interference to the Upper 700 MHz C Block than already exists under current rules from adjacent operations in the current commercial Upper 700 MHz A Block or the Upper 700 MHz D Block.

[12] Base and fixed stations in the Upper 700 MHz commercial spectrum may not exceed 1 kW effective radiated power ("ERP") at antenna heights of 305 meters height above average terrain, although higher antennas are permitted for lower power levels; higher power levels are prohibited. 47 C.F.R. § 27.50(b)(1)-(3). As a result, Upper 700 MHz commercial operations may be either low-power, low-site or low-power, high-site. In the Lower 700 MHz band, the same height flexibility applies for base and fixed stations below 1 kW ERP. 47 C.F.R. § 27.50(c)(1). *See Lower 700 MHz R&O* ¶¶ 80 and 74 n.210.

Under existing rules, the Lower 700 MHz C Block licensee must not cause certain undue interference to the Upper 700 MHz **A** Block *at 746 MHz*. The adoption of the BOP or Band Plan 3 would not change the Lower C Block licensee's obligations at its band edge (*i.e.*, 746 MHz), though its neighbor would then be the Upper 700 MHz C Block licensee. Similarly, under existing rules, the Upper 700 MHz C Block licensee must not cause undue interference to the Upper 700 MHz **A** Block licensee at its band edge (*i.e.*, 747 MHz). The adoption of the BOP or Band Plan 3 would not change those obligations; it would simply change the identity of the licensee entitled to protection from undue interference and the frequency at which its band edge is located.

The Commission "devoted considerable discussion to the possibility of harmful interference from 50 kW ERP operations to systems on adjacent channels operating at lower power levels," and "evaluated fully the potential impact of 50 kW transmissions on operations in the Upper 700 MHz Band, including users of spectrum licensed to guard band managers on 746-747 MHz" when it established the rules governing the Lower 700 MHz band.'[13] The real-world experience of Access Spectrum as a band manager has confirmed the validity of this analysis. The Upper 700 MHz Licensees also agree with the Commission's more recent conclusion that

> [a]lthough we recognize concerns expressed by certain parties regarding the potential for adjacent band interference into the current unauctioned paired blocks (i.e., the current [Lower] A and B Blocks) from high-power emissions in adjacent incumbent and unauctioned unpaired blocks, we continue to believe that our out-of-band emission limits coupled with the 3 mW/m^2 PFD requirement will be effective in protecting unauctioned paired blocks from adjacent channel interference.'[14]

[113] *Lower 700 MHz MO&O* ¶ *22*.

[114] *Further Notice* ¶ 96.

Although the Order was discussing the Lower 700 MHz band, this conclusion can and should be applied to the interface between the Upper and Lower 700 MHz bands, as well.

In summary, the lower segment of the A Block is not necessary to protect commercial operations in either the Upper or Lower 700 MHz bands. Current rules are sufficient to protect against interference between operators in the two bands, despite their different height and power requirements, whether the Commission adopts the BOP or Band Plan 3.

IV. CONCLUSION

In conclusion, we request that the Commission adopt the Upper 700 MHz band plan and related proposals described herein.

Respectfully submitted,

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APPENDIX A

A Proposal for
Facilitating the Combination of the **A** and D Blocks

In the *Further Notice*, the Commission solicited comment on whether to implement a two-sided auction that would enable bidders to combine Blocks D and A under Band Plan 3.[1] The Upper 700 MHz Licensees recommend that the Commission consider implementing a two-sided auction, or variants, such as the "option variant" described below, so as to enable bidders to combine Blocks D and A under Band Plan 3 and thereby acquire a full 6 MHz of paired spectrum.

The aggregation of the D and A Blocks under Band Plan 3 would create a 6 MHz pair that would allow a single licensee to realize the benefits of block sizes larger than 5 MHz.[2] Although D Block licensees could obtain A Block spectrum through secondary markets, this method of license assignment may well be less efficient than acquisition of this spectrum through a two-sided auction, or an alternative private transaction approach that achieves the aims of a two-sided auction, such as the option variant described below. In the absence of a two-sided auction, prospective D Block bidders that place significant value on having 6 MHz paired would face a greater exposure risk than potential bidders who would find 5 MHz paired sufficient. A two-sided auction could minimize this exposure risk for prospective bidders and allow efficient aggregation of A and D Block spectrum.[3]

A potential drawback of a two-sided auction is the possibility that a licensee might not obtain the requisite amount of spectrum uniformly across its desired service

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[1] *Further Notice* ¶ 187.

[2] *See* Access Spectrum/Pegasus Sept. 29 Comments at 11-23; *see also* Kolodzy Decl.

[3] In the two-sided auction, the winning bidder for the 5 MHz D Block in any geography would also win the 1 MHz A Block for that geography.

area if some incumbent licensees decline to participate in the two-sided auction.[4] For example, if the incumbent A Block licensee in San Francisco did not wish to sell its license, D Block licensees seeking 6 MHz paired nationwide or in the Pacific region would find a 1 MHz paired hole in their footprint.[5] One way for the Commission to mitigate that exposure risk would be to implement a two-sided auction *only if* the Commission were able to secure voluntary agreements from all A Block licensees to give up their licenses in a two-sided auction. A potential drawback of a unanimous consent requirement to the A Block licensees is that such an approach also would require A Block licensees to agree to give up their licenses before they know the results of the auction.[6]

Another potential drawback of two-sided auctions, from the perspective of the Commission and potential bidders, is the prospect that it may necessitate auction software changes that could be time consuming to implement and risky to execute given the tight statutory schedule for the auctions.

The Upper 700 MHz Licensees suggest that the Commission could avoid these potential drawbacks by implementing an "option" variant of a two-sided auction, described below, that would assure prospective bidders that they would acquire a 6 MHz paired block at auction in each area to be auctioned. Under the option variant approach,

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4 This is the competitive bidding phenomenon referred to as "exposure risk" that combinatorial bidding is designed to minimize. Unless the entire A Block is included in a two-sided auction mechanism, the exposure risk would remain for bidders interested in the A Block. The licensees for the A Block spectrum included in the auction would either be required to accept the winning bid in exchange for their license or relocate their operations to the B Block.

5 The Commission could reduce the exposure risk for the A Block by including it in a combinatorial bidding regime. However, this would complicate the combinatorial bidding process.

6 The auction value of the spectrum will affect the relative appeal of alternative plans for A Block licensees.

as a condition of acquiring the D Block license, the D Block licensee would be required to grant an option to the A Block licensee to vacate the spectrum held by each A Block license in exchange for a payment equivalent to the $/MHz-pop paid for the D Block license comprising the geographic area of the affected A Block license multiplied by the number of MHz-pops in that A Block license.[7] If the incumbent A Block licensee exercised the option,[8] the D Block winner would pay the A Block licensee for the license. This transaction would be a private transaction, outside the FCC auction process. Alternatively, if the incumbent A Block licensee did not exercise the option, the incumbent A Block licensee would agree to move to the corresponding B Block guard band in the same geographic market, and the D Block licensee would pay the U.S. Treasury to acquire the license for the vacated A Block.

The Upper 700 MHz Licensees also note that while the Commission need not decide the specific characteristics of the auction process at this time, it should be careful to retain the full range of auction structure options. The Commission can do so by delegating authority to the Wireless Telecommunications Bureau to implement two-sided auctions in any form that the Bureau considers to be in the public interest, including the option variant described above, for the Upper 700 MHz spectrum.

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[7] Access Spectrum has a few customers operating on its A Block licenses. Some of those customers would need to be protected until their current contracts expire or until they can be relocated pursuant to the terms of the individual contracts.

[8] The Commission should permit a reasonable time period for the A Block licensees to exercise their option. During this period, A Block licensees would be able to evaluate their options and D Block winners could raise the additional funds necessary to complete the transaction. A time period of no shorter than 3 months and, if possible, 4-6 months would be most appropriate.

APPENDIX B

The Broadband Optimization Plan

Access Spectrum and Pegasus, along with the majority of public safety agencies,[1] public interest groups,[2] and many other significant commercial entities,[3] have advocated the adoption of the Broadband Optimization Plan.[4] The BOP continues to be superior to all other band plans proposed for the 700 MHz band. Specifically, the BOP:

- Includes an additional 3 MHz of spectrum nationwide for the public safety community;
- Enables Public Safety to manage its own guard bands;

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[1] The following public safety agencies have indicated their support for the BOP: the National Public Safety Telecommunications Coalition (the members of which are the American Association of State Highway Transportation Officials, American Radio Relay League, American Red Cross, Association of Public-Safety Communications Officials-International, Association of Fish & Wildlife Agencies, Forestry Conservation Communications Association, International Association of Chiefs of Police, International Association of Emergency Managers, International Association of Fire Chiefs, International Municipal Signal Association, National Association of State Emergency Medical Services Officials, National Association of State Foresters, National Association of State Telecommunications Directors), Major Cities Chiefs Association, Major County Sheriffs Association, the National Sheriffs Association, the New York State Office for Technology, and the following 700 MHz Regional Planning Committees: Region 4 (Arkansas), Region 5 (Southern California), Region 7 (Colorado), Region 8 (Metropolitan New York City Area), Region 9 (Florida), Region 10 (Georgia), Region 11 (Hawaii), Region 13 (Illinois except Southern Lake Michigan counties), Region 14 (Indiana except Southern Lake Michigan counties), Region 17 (Kentucky), Region 24 (Missouri), Region 26 (Nebraska), Region 30 (New York - Albany area), Region 32 (North Dakota), Region 33 (Ohio), Region 35 (Oregon), Region 39 (Tennessee), Region 45 (Wisconsin except Southern Lake Michigan counties), Region 54 (Chicago – Southern Lake Michigan counties) and Region 55 (New York – Buffalo).

[2] The BOP has received support from the Ad Hoc Public Interest Spectrum Coalition, which includes Media Access Project, Consumers Union, Consumer Federation of America, Free Press, New America Foundation, and Public Knowledge.

[3] In addition to Access Spectrum and Pegasus, the commercial entities that have supported the BOP include Arcadian Networks, the DIRECTV Group, Google, EchoStar, Intel, Northrop Grumman, the SDR Forum, Skype, the WiMAX Forum and Yahoo!.

[4] *See generally* Comments of Access Spectrum, L.L.C., Columbia Capital III, LLC, Intel Corporation, and Pegasus Communications Corporation, WT Docket No. 96-86, at 13-14 (June 6, 2006); Access Spectrum/Pegasus Sept. 29 Comments; Access Spectrum/Pegasus A/B Block Comments; Access Spectrum/Pegasus A/B Block Reply Comments; Access Spectrum/Pegasus Public Safety 9th NPRM Comments.

- Places public safety broadband operations directly adjacent to the commercial broadband operations, thereby promoting public-private partnerships;
- Resolves the international border, equipment reprogramming, and spectrum planning database issues that the public safety community insisted must be resolved before public safety could support consolidation of the narrowband allocation;
- Has undergone a thorough technical review resulting in the conclusion that there are no technical issues remaining that would prevent adoption of the BOP by the FCC,' clearing the way for immediate adoption of the BOP and enabling Public Safety's deployment of broadband technologies; and
- Results in an additional 3 MHz of spectrum nationwide for commercial broadband use (a 10% increase in capacity) and reduces the amount of spectrum dedicated to "guard bands," and therefore under-utilized, from 10 MHz to 3 MHz.

No other alternative in the record offers all of these benefits. The *Further Notice* tentatively concludes that the Commission should not adopt the BOP.[6] That tentative conclusion is premised upon factual inaccuracies and an unnecessarily narrow interpretation of the Communications Act and should not be adopted.

A. The BOP's Proposed Spectrum Swap Would Not Award Additional Spectrum To Existing Licensees

The spectrum swap component of the BOP has been mischaracterized by some as assigning additional spectrum to licensees outside of the competitive bidding process. The *Further Notice* appears to reflect a misunderstanding of the spectrum swap, stating that "we believe [the BOP] is not in the public interest because [it] would assign additional spectrum to current licensees without competitive bidding."[7]

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5 *See* Second TWG Report.

6 *Further Notice* ¶ *227.*

7 *Id.; see also id.* ¶ *232* (characterizing the BOP as "granting . . . additional spectrum"); *id.* ¶237 (concluding that the commission lacks authority to adopt the BOP because it proposes that incumbent licensees "be afforded . . . additional bandwidth beyond its [sic] existing spectrum assignment").

Access Spectrum and Pegasus explained previously that the spectrum swap proposed as part of the BOP would not involve the net transfer of any spectrum but, instead, would amount to an even exchange on a MHz-pops basis.[8] None of the licensees would end up with more spectrum than they originally held when measured on a MHz-pops basis. Moreover, all the spectrum involved in the swap was assigned originally by competitive bidding, consistent with Sections 337 and 309(j). Therefore, characterizing the BOP as assigning additional spectrum without competitive bidding is incorrect.

In evaluating the public policy benefits of the spectrum swap proposed as part of the BOP, it is also worth noting the following:

- The Upper 700 MHz Licensees would have turned in all of their 4 MHz (2 **x** 2 MHz) B Block licenses (resulting in a diminution in license size for these licenses) as well as some of their A Block licenses in exchange for the 500 kHz augmentation to the remaining A Block licenses.
- The swap was proposed in the context of a band plan that would have allocated only a 500 kHz pair from the returned licenses back to the commercial spectrum. Therefore, the Commission could have re-auctioned only a 500 kHz pair which, on its own, would have been of very limited utility. Moreover, there remained the risk in a re-auction that different entities would hold licenses for the A Block and the 500 kHz pair. Combining the existing 1 MHz paired A Block with the 500 kHz pair to create a 1.5 MHz pair would have created a license with more realistic potential for broadband use.

Therefore, any description of the spectrum swap component of the BOP ought to recognize these characteristics of the proposal.

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[8] *See* Letter from Michael Gottdenker and Ruth Milkman on behalf of Access Spectrum, LLC and Marshall Pagon and Kathleen Wallman on behalf of Pegasus Communications Corporation, to Marlene H. Dortch, FCC Secretary, WT Docket No. 06-169, at 6-7 (April 13,2007) ("Access Spectrum/Pegasus April 13,2007 Letter"); *see also* Access Spectrum/Pegasus March 21,2007 Letter at 6-7.

B. The BOP Would Not Violate Section 337

The BOP would fulfill the Commission's obligation to manage spectrum in a way that promotes the safety of life and property,[9] and that it is fully consistent with the Communications Act.[10]

The *Further Notice* states that "[i]t appears . . . that the reallocation of commercial spectrum to public safety contemplated by the various Guard Bands proposals . . . would be inconsistent with Section 337."" The *Further Notice* posits that even if Section 337(a) does not establish a permanent legislative bar on reallocating the Upper 700 MHz band, it would be premature to consider reallocation "before the licensees have had a meaningful opportunity to use unencumbered spectrum as initially envisioned."[12] This is certainly one possible reading of the statute, but it is by no means the only one, nor the best one, as Access Spectrum and Pegasus have previously explained at length." The Upper 700 MHz Licensees continue to endorse the BOP as an approach superior to any of the proposals in the *Further Notice*, and urge the Commission to use its legal authority

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9 47 U.S.C. § 151.

10 *See, e.g.*, Access Spectrum/Pegasus March 21,2007 Letter at 4-7; Letter from Ruth Milkman on behalf of Access Spectrum, LLC and Kathleen Wallman on behalf of Pegasus Communications Corporation, to Marlene H. Dortch, FCC Secretary, WT Docket Nos. 96-86 and 06-169 (March 2,2007); Letter from Ruth Milkman, Counsel to Access Spectrum, LLC and Kathleen Wallman, Adviser to Pegasus Communications Corporation, to Marlene H. Dortch, FCC Secretary, WT Docket Nos. 96-86, 06-150, and 06-169 (Dec. 12,2006).

11 *Further Notice* ¶ 230.

12 *Id.*

13 *See, e.g.,* Access Spectrum/Pegasus March 21,2007 Letter at 5-6; see *also* Access Spectrum/Pegasus A/B Reply Comments at 20-21; Access Spectrum/Pegasus April 13, 2007 Letter at 4-5.

to the fullest extent in order to serve the public interest by enhancing public safety spectrum at 700 MHz.

Certificate of Service

I hereby certify that on this 23rd day of May, 2007, I caused a true and correct copy of the foregoing Comments of the Access Spectrum, LLC, Dominion 700, Inc., Harbor Guardband, LLC, and Pegasus Communications Corporation to be mailed by electronic mail to:

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