

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)
)
Realignment of the)
896-901/935-940 MHz Band)
to Create a Private Enterprise)
Broadband Allocation)

To: The Commission

PETITION FOR RULEMAKING
OF THE
ENTERPRISE WIRELESS ALLIANCE
AND
PACIFIC DATAVISION, INC.

Respectfully submitted,

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SUMMARY

The FCC is overseeing a broadband revolution. The agency has identified spectrum that will provide the American public, including in its schools, libraries, and healthcare facilities, with the wireless broadband capacity to meet 21st century communications needs. This broadband service generally is provided by commercial operators whose system deployments reach a significant percentage of the nation's population.

Certain business enterprise broadband requirements can be met on these commercial systems; others can be satisfied on unlicensed spectrum. However, critical infrastructure entities and other business users have broadband coverage, security, and operating needs that go beyond what is available on commercial networks and require deployment of systems designed and built to their particular, stringent standards.

The Petitioners represent a significant percentage of the 896-901/935-940 MHz band spectrum allocated for private land mobile radio use almost thirty (30) years ago. This band is intensively utilized and half of it already has been assigned through an overlay auction pursuant to the Commission's competitive bidding process. The narrowband systems deployed on these frequencies have played a critical role in allowing the companies that utilize them to operate their businesses in a safer and more efficient fashion. However, the Petitioners have determined that a realignment of this 900 MHz allocation represents a rare opportunity for a broadband service dedicated to meeting the stringent needs of this user community.

The Petitioners recommend that the band be sub-divided into a narrowband and broadband segment. They propose adoption of a Private Enterprise Broadband ("PEBB") allocation, a single two hundred forty (240)-channel license (898-901/937-940 MHz) issued on an SMR MTA basis, and retention of the spectrum below 898/937 MHz for both site-based and geographic narrowband operations. This would be accomplished in large part by allowing MTA SMR licensees on frequencies below 898/937 MHz to exchange those licenses for equivalent MTA licenses on heretofore site-based B/ILT spectrum above that channel. The vacated MTA spectrum below 898/937 MHz, as well as certain B/ILT channels in that range that have been converted to SMR use, would be reserved for the relocation of site-based systems moving from B/ILT channels above 898/937 MHz. In all cases, as in other band realignments, no incumbent would be required to change frequencies unless it was provided with fully Comparable Facilities (as defined below) on its replacement spectrum.

The PEBB license would be awarded in each MTA to the entity already holding at least fifteen (15) of the twenty (20) geographic licenses in that MTA. The license would be issued subject to the following conditions:

- The PEBB licensee would be required to fund the relocation to comparable facilities (as defined in FCC Rule Section 90.699, including the same quality of service as the facilities enjoyed prior to relocation ("Comparable Facilities")) below 898/937 MHz of all site-based B/ILT licensees in the PEBB allocation, as well as any MTA licensees that wish to continue operating narrowband systems.

Comparability for this purpose would include ensuring that the licensee experienced no reduction in system capacity, coverage or signal strength within its coverage area. If there are instances in which providing Comparable Facilities requires additional equipment, such as antennas, combiners, or even additional sites, that cost would be borne by the PEBB licensee. Any disputes regarding the comparability of facilities for members of the American Petroleum Institute or the Utilities Telecom Council would be referred for resolution to the appropriate organization.

- MTA licensees above 898/937 MHz that do not wish to be moved to lower spectrum would negotiate an arrangement with the PEBB licensee to have their spectrum included in the PEBB authorization, including assuming responsibility for their *pro rata* portion of the relocation costs.
- The PEBB authorization would include a condition requiring the licensee to offer a build-to-suit broadband solution to any requesting CII or B/ILT entity. The broadband solution offered by the PEBB licensee would offer priority access to CII entities. Negotiation of the contractual arrangement between the broadband user and the PEBB licensee would be subject to a good faith obligation applicable to both parties.

The Petitioners recommend that the initial frequency recommendation process be developed and managed by EWA, an organization with decades of experience in the coordination of this and other PLMR spectrum and a detailed understanding of FCC regulations. EWA will identify the alternative frequencies for use by licensees moving from the PEBB allocation. Once the frequencies have been confirmed as satisfying the Comparable Facilities standard, the licensee will negotiate a realignment agreement with the PEBB licensee (in most cases, Pacific DataVision, Inc., which holds most SMR MTA licenses in virtually every MTA in the country) in which the PEBB licensee will assume all responsibility for the cost of implementing the retuning of the licensee's equipment. While the FCC has adopted various models for negotiated reimbursement of such costs in band restructurings, the Petitioners recommend that the FCC use the approach adopted for the "upper 200" 800 MHz channel relocation, a band realignment in which all but a handful of negotiations were completed promptly and without a need for FCC involvement.

Finally, the Petitioners urge the FCC to be prepared to reinstitute a freeze on the licensing of 900 MHz Band B/ILT frequencies should it observe an unusual increase in applications for this spectrum. In particular, the Commission should be alert to applications from parties whose eligibility for the channels requested is questionable. EWA, and it believes other FCC-certified Frequency Advisory Committees, would be pleased to assist the Commission in this effort to prevent purely speculative applicants with no legitimate basis for eligibility from acquiring 900 MHz spectrum in the hope that they will be paid to relinquish it. While no licensing freeze should be adopted without a compelling public interest justification, the FCC is familiar with the unfortunate fact that a proposed band realignment sometimes results in an influx of such applications to the detriment of qualified users with a legitimate need for the spectrum in question, as well as to the realignment itself.

telecommunications capability.”¹ An increasingly competitive national and global economy demands that these services and products be delivered as quickly and efficiently as possible. Smart grid utility operations, petroleum production, and security for the nation’s utility, pipeline and transportation facilities would be enhanced by using state-of-the-art broadband technology. America’s businesses are prepared to invest in the deployment of broadband equipment, but require systems that meet their particular requirements. These requirements often are similar to those of their public safety counterparts in terms of reliability, priority access, and coverage. Although current spectrum options made available by the Commission are useful, and used by critical infrastructure industry (“CII”) companies for certain applications, their more critical requirements cannot be satisfied on unlicensed spectrum except in extremely remote areas, are not congruent with the geographic licensing packages available in the FCC’s auction process, and are not addressed satisfactorily in the broadband offerings of commercial carriers.

Organizations representing these types of users have urged the Commission to identify spectrum for broadband operations by business enterprise entities, particularly those classified as CII.² The optimal solution would be a nationwide “greenfield” allocation of broadband spectrum for CII and other business enterprise users on which they could deploy systems tailored to their particular, demanding requirements. However, recognizing the FCC’s challenge in identifying usable broadband spectrum for consumer applications, the Enterprise Wireless Alliance (“EWA”), which represents a broad range of Private Land Mobile Radio (“PLMR”) licensees/members, including a significant number of 900 MHz licensees, some of which are CII entities, in

¹ See e.g., *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 14-126, *Tenth Broadband Progress Notice of Inquiry*, 29 FCC Rcd 9747 (rel. Aug. 5, 2014).

² See n. 19, 20, 21, and 22 *infra*.

conjunction with Pacific DataVision, Inc. (“PDV”),³ which itself holds licenses for more than fifty percent (50%) of the 900 MHz band nationwide (collectively, the “Petitioners”), herein propose a realignment of the 896-901/935-940 MHz band already allocated for PLMR use (“900 MHz Band”)⁴ in a configuration that will permit narrowband and broadband segments to co-exist within this 5/5 megahertz of spectrum.⁵ In the absence of an identified greenfield PLMR/CII allocation, they have determined that this spectrum represents a rare opportunity for a broadband service dedicated to meeting the stringent needs of the CII and Business/Industrial/Land Transportation (“B/ILT”) user community - the community that delivers the goods and services upon which every individual, town, city, county, and state in this nation relies for day-to-day existence. Therefore, pursuant to Section 1.401 of the FCC Rules, the Petitioners respectfully request the Commission to initiate a rulemaking proceeding to provide for both a narrowband and broadband allocation within the 900 MHz Band, consistent with the recommendations herein, including issuance of a broadband authorization in each Major Trading Area (“MTA”) to a Private Enterprise Broadband (“PEBB”) licensee.

I HISTORY OF THE 896-901/935-940 MHz BAND

The 900 MHz Band was allocated for Part 90 use in 1986.⁶ The band plan was designed to satisfy the narrowband PLMR requirements of that time, both trunked and conventional, by licensees operating private, internal systems as well as those offering commercial Specialized Mobile Radio (“SMR”) service. Even then, however, the FCC anticipated that newer technologies

³ PDV has acquired the 900 MHz licenses for both SMR and B/ILT channels previously held by Sprint Corporation (“Sprint,” previously Nextel Communications, Inc.). That transaction closed on September 15, 2014. For purposes of clarity, the name Sprint is used when describing the history of the band. PDV, the recent assignee of this spectrum, is referenced in other portions of this filing.

⁴ 47 C.F.R. §90.601 *et seq.*

⁵ As discussed below, this proposal will create a broadband opportunity without disenfranchising any incumbent 900 MHz licensee that wishes to continue operating a narrowband system and will provide ongoing opportunities for additional narrowband systems.

⁶ 900 MHz Reserve Band Allocations, GN Docket No. 84-1233, *Report and Order*, 2 FCC Rcd 1825 (1986).

might require other than 12.5 kHz bandwidth capability. The allocation was sub-divided into forty (40) ten (10)-channel blocks of contiguous channels, alternating between blocks available for SMR systems and those designated for B/ILT users.⁷ However, Rule Section 90.645(h) provides that up to ten (10) contiguous 900 MHz channels may be combined for “systems requiring more than the normal single channel bandwidth.”⁸ Thus, almost thirty (30) years ago, the Commission adopted flexible rules intended to accommodate the deployment of more advanced technologies as they became available.

After originally granting licenses for this spectrum on the traditional Part 90 site-specific basis, the FCC modified its rules to conduct “overlay” auctions on the SMR-designated blocks.⁹ These licenses were awarded on a MTA basis with auction winners required to protect the operations of incumbent, co-channel, site-based licensees. Sprint, which was the predominant licensee of site-based SMR channels, purchased the great majority of SMR MTA blocks either in the FCC auctions or subsequently in the secondary market for use in its iDEN network. In conjunction with the Commission’s 800 MHz rebanding proceeding,¹⁰ the FCC modified its rules to allow licensees of B/ILT channels to convert them to SMR status. In particular, the FCC recognized that this spectrum would provide valuable additional capacity to accommodate iDEN traffic during the 800 MHz rebanding process. Sprint purchased a substantial number of channels from B/ILT licensees in major urban areas for this purpose and converted them to SMR/iDEN use pursuant to the flexibility permitted under Section 90.645(h).

⁷ One of the twenty (20) B/ILT blocks contains only nine, not ten (10), channels.

⁸ 47 C.F.R. §90.645(h).

⁹ See 900 MHz SMR Allocation, PR Docket No. 89-553, *Second Report and Order and Second Further Notice of Proposed Rule Making*, 60 FR 21987 (1995).

¹⁰ See Improving Public Safety Communications in the 800 MHz Band, WT Docket No. 02-55, *Report and Order*, 19 FCC Rcd 18277 (2004).

The FCC also proposed to authorize geographic licenses on B/ILT channels by conducting overlay auctions on this portion of the 900 MHz Band.¹¹ In anticipation of this change, the Commission froze licensing of new 900 MHz B/ILT systems.¹² The PLMR user community opposed this FCC initiative and it ultimately was abandoned in 2008,¹³ although the 900 MHz licensing freeze was not lifted until 2013, and even then it technically was modified rather than terminated.¹⁴ In the interim, in accordance with this relatively incumbent-friendly freeze, licensees could expand existing systems by adding sites and/or frequencies, but could not deploy new systems except through the purchase of an existing license on B/ILT channels. Thus, for almost a decade, B/ILT eligible entities could implement new systems only by acquiring existing B/ILT authorizations.

The result of this licensing history is reflected in the FCC's Universal Licensing System ("ULS") database. PDV is by far the dominant 900 MHz licensee. It holds virtually every SMR MTA license in all but a small handful of markets. It also holds licenses for a significant number of converted B/ILT channels in most major markets for an average of two hundred forty (240) 900 MHz channels in each of the top twenty (20) markets, as well as substantial 900 MHz Band spectrum outside those markets. Utilities comprise the next largest category of 900 MHz licensee, almost exclusively on B/ILT channels. The remaining B/ILT channels are spread among a variety of business enterprise licensees, including CII entities and SMRs that have converted B/ILT

¹¹ See 900 MHz B/ILT Pool Frequencies – Flexible Use, WT Docket No. 05-62, *Notice of Proposed Rulemaking and Memorandum Opinion and Order*, 20 FCC Rcd 3814 (2005).

¹² See Wireless Telecommunications Bureau Freezes Applications in the 900 MHz Band, WT Docket No. 05-62, *Public Notice*, 19 FCC Rcd 18277 (2004) ("900 MHz Freeze Order").

¹³ See 900 MHz B/ILT Pool Frequencies – Flexible Use, WT Docket No. 05-62, *Report and Order*, 23 FCC Rcd 15856 (2008).

¹⁴ See 900 MHz B/ILT Pool Frequencies – Flexible Use, WT Docket No. 05-62, *Order on Reconsideration*, 23 FCC Rcd 9464 (2013); see also, Commission Modified Freeze on Applications in the 900 MHz Band, *Public Notice*, WT Docket Nos. 05-62 and 02-55, 28 FCC Rcd 13165 (2013).

channels to commercial use. B/ILT spectrum usage is concentrated in more urban areas, presumably because of the almost decade-long freeze that prevented potential licensees from moving into less urbanized markets.

II 900 MHz BAND REALIGNMENT

A. CII/PLMR Users Have Documented a Compelling Need for a Dedicated Broadband Allocation

The FCC needs no introduction to the importance of broadband capability for the business enterprise community. The Commission itself has championed this cause as part of its larger broadband initiative. It has expressly recognized the importance of high-speed broadband for robust business growth¹⁵ in addition to the compelling broadband requirements of the general consumer public.

The Commission has addressed the nation's wireless broadband needs by allocating or repurposing substantial amounts of spectrum for consumer broadband use. This spectrum is then assigned to Commercial Mobile Radio Service ("CMRS") licensees through competitive bidding procedures. The successful bidders deploy this spectrum in configurations designed to meet FCC build-out requirements and to maximize profitability. Both are legitimate objectives, but they understandably focus CMRS operators on the provision of service to the largest number of persons by building in areas of greatest population density.

CMRS systems may work well for smaller businesses in populated areas whose broadband needs are more sporadic and not absolutely essential to their ongoing operations. However, this model is not well-suited to a significant number of CII/PLMR entities. These companies often operate in areas that are not served reliably by CMRS systems: Utilities deliver critical energy to

¹⁵ See, e.g., Statement of Tom Wheeler, Chairman, Before the Committee on Small Business, U.S. House of Representatives: *Hearing on "Is the FCC Responding to the Needs of Small Business and Rural America?"* (Sept. 17, 2014).

facilities in remote areas, pipelines snake through underpopulated terrain to deliver the means of generating that energy, and railroads crisscross the entire nation, carrying goods in a cost- and energy-efficient manner. These users have broadband requirements far outside the geographic scope of reliable commercial service. If they are to have broadband capability in those areas, they will need to deploy their own facilities on spectrum dedicated for their particular use.¹⁶

Even if CMRS providers were to expand their deployment to the remote areas needed by certain CII/PLMR users, commercial broadband service does not meet the reliability standards desired, or in some cases required, for these industries. CMRS networks generally are not designed to a 99.999% reliability standard, a standard that applies to many CII entities as well as to the public safety community, and carriers do not provide the priority access needed to ensure service availability at the most critical times.¹⁷ CMRS sites typically are not hardened or equipped with back-up generator power sufficient to satisfy CII legal and/or operational needs. Because restoration of power and other critical functions frequently go hand-in-hand with first responder activities during emergency situations, the quality of broadband service available for CII entities must be comparable to the service available for public safety users.¹⁸

¹⁶ As an example, it is not practical for a pipeline needing broadband service from the Canadian border to the Gulf of Mexico to purchase the needed spectrum in the FCC's competitive bidding process. It would require an entity needing spectrum for private, internal use to outbid those who intend to provide commercial service in the highly populated markets within each of the geographic areas needed. Such an entity also would need to determine how it could satisfy the FCC's build-out requirements in each market and almost inevitably would find it necessary to attempt to partition and disaggregate the auctioned spectrum to multiple third parties. This simply is not a viable business approach for CII/PLMR users that need broadband capability in clearly defined amounts and geographic areas, including areas not adequately served by CMRS systems.

¹⁷ Prioritization services such as the Government Emergency Telecommunications Service and Wireless Priority Service, which can be useful for prioritizing voice calls, are not suited for allowing CII to meet reliability requirements of broadband data traffic. For example, utilities are subject to mandatory reliability standards adopted and enforced by the Federal Energy Regulatory Commission ("FERC") and the North American Electric Reliability Corporation ("NERC") pursuant to the Energy Policy Act of 2005.

¹⁸ See National Public Safety Telecommunications Council, Public Safety Communications Report, "*Defining Public Safety Grade Systems and Facilities*" (May 22, 2014).

And even if CMRS service is “functional” during emergency situations, that is meaningless to entities providing critical services if they do not have access to the network through a ruthless preemption mechanism. Every CMRS subscriber is familiar with the gridlock that occurs as users attempt to access a network during even localized emergency situations, such as Hurricane Katrina, much less those with national significance like the terrorist attacks on 9/11. CMRS networks are not designed to handle that level of call volume, and building them to accommodate maximum capacity during extraordinary events would be cost prohibitive.

CMRS networks do an excellent job of providing the service they are designed to provide in terms of geographic coverage and reliability, with a variety of service offerings at prices and access levels that are generally acceptable to consumers. However, these same design features are not consistent with the needs of CII and other PLMR entities that have requirements distinct from those of the general public.

PLMR users such as CII and other private enterprise entities have relied on wireless voice and data capabilities to improve their business operations since the introduction of these technologies more than fifty (50) years ago. Throughout these decades, they consistently have improved their spectrum efficiency both by narrowing the bandwidth of their frequencies and by embracing technologies such as trunking. While wireless is an embedded part of most successful businesses today, there are limits to the capabilities available on these narrowband and wideband systems.

Wireless IP-based connectivity, demand, and usage have skyrocketed in the last ten (10) years. End-to-end IP broadband-capable connectivity is the means to leverage the functional benefits of the Internet of Everything in which many CII and many other PLMR users necessarily

must become immersed. Having this connectivity anywhere and anytime offers a powerful, indeed in this century an essential, tool for these American businesses.

Whether it is a single user with a single device who is completing routine work orders, being dispatched to perform a critical task, or moving a Cell on Wheels (“COW”) into a disaster area to establish local LAN/WAN connectivity, business enterprise and CII organizations have a growing need for the ability and flexibility to connect their IP systems and employees. They may need to check the status of events with broad customer impact such as power outages, coordinate with other utilities, government agencies, including first responders, and perform a host of other functions that only wireless IP-based broadband access designed to their specifications can provide. Applications such as VoIP, video, and other large data file transfers all require broadband functionality. Without the throughput and performance characteristics provided by wireless broadband, these entities will be incapable of utilizing critically needed applications to the detriment of the customers they serve and the general public.

The CII need for dedicated broadband spectrum has been well-documented at the FCC. API and UTC, in particular, have submitted multiple filings detailing the lack of spectrum allocated for this use and the myriad purposes to which that spectrum could be put. Utilities have described the smart grid applications, including substation communications, SCADA and communications with utility crews and field engineering they would deploy if appropriate spectrum were available.¹⁹ API has explained the need for “higher speed point-to-multipoint mission critical IP-based applications such as voice, data, and SCADA necessary to support,

¹⁹ See, e.g., Comments of the Utilities Telecom Council – NBP Public Notice #6, GN Docket No. 09-47, filed Oct. 23, 2009 at 9-11 (“UTC Comments”).

monitor, control and secure the nation's pipeline and plant infrastructure"²⁰ that would be satisfied with broadband capability.

Although unlicensed bands are useful tools for certain applications, both API and UTC have described the unsuitability of unlicensed spectrum for the mission critical operations of these CII entities and have decried the increasing interference their members experience in the unlicensed bands.²¹ Both have filed comments, along with several other entities, regarding the FCC's 3.5-3.65 GHz band proposal.²² While the CII community is hopeful that the Commission will revise its current proposal and provide CII entities priority access to spectrum suitable for broadband applications in the 3.65 GHz range, the outcome of that proceeding is uncertain. Moreover, a 900 MHz broadband allocation would be particularly valuable in areas where high attenuation is present.

Numerous non-CII business enterprise companies also have an urgent need for dedicated broadband spectrum. For example, UPS relies extensively on wireless communications to support its national and international delivery services and invests heavily each year in technology R&D to enhance its operations. Yet its access to licensed broadband spectrum is even more limited than that of entities defined as CII. It has a variety of applications both in its aviation and its package routing and delivery operations that would benefit greatly from interference-free broadband service designed to meet its specific requirements, ones that are not always accommodated on commercial broadband systems, but lack of spectrum prevents those applications from being deployed.

²⁰ See Reply Comments of the American Petroleum Institute, GN Docket No. 12-354, filed Apr. 5, 2013 at 2.

²¹ See, e.g., UTC Comments at 6; Reply Comments of the American Petroleum Institute – NBP Public Notice #6. GN Docket No. 09-47, filed Nov. 13, 2009 at 3-5.

²² See, e.g., Reply Comments of API, filed Aug. 18, 2014, and joint Reply Comments of UTC and the Edison Electric Institute, filed Aug. 15, 2014, GN Docket No. 12-354.

B. Petitioners Represent a Majority of 900 MHz Band Spectrum

The PLMR community represents perhaps the broadest range of users sharing a common pool of FCC-regulated spectrum. The 900 MHz Band alone is populated by utilities, petroleum companies, manufacturing plants, taxicab and limousine services, airlines, hospitals, construction companies, ambulance services, and virtually every type of enterprise conducting business operations in this country, including commercial providers of two-way dispatch service. The communications requirements of these entities are varied as well. Some 900 MHz licensees undoubtedly wish to continue operating their existing narrowband systems and have no immediate need for PLMR broadband capability. Others, however, primarily CII entities and businesses with larger facilities and more complex communications needs, are eager to utilize a broadband system designed and built to their specific requirements. The Petitioners recognize both types of users and, as detailed below, propose a 900 MHz Band realignment that will provide for broadband without disenfranchising any licensee that chooses to continue operating in a narrowband mode.

The realignment proposed herein would not be viable without the endorsement of and participation by PDV, by far the largest holder of 900 MHz spectrum nationwide. PDV is in the process of redeploying the spectrum acquired from Sprint for the provision of digital trunked SMR service on a more immediate basis. However, it has confirmed its intention to offer build-to-suit broadband service for PLMR users, with mandatory priority access for CII entities, upon the FCC's adoption of a band plan consistent with the instant proposal. As detailed below, it also has confirmed its willingness to finance the reasonable relocation costs needed to create the discrete, contiguous broadband and narrowband allocations in the proposed realignment, consistent with the obligation typically imposed on geographic licensees in similar situations.

EWA, while not a licensee itself, is an organization that represents numerous 900 MHz Band license holders. It has discussed this proposal in detail with its members and supports it as a balanced approach for meeting the burgeoning broadband requirements of certain members, while preserving narrowband use for licensees whose needs are satisfied with more traditional service.

The Petitioners also have had extensive, extremely productive discussions with the Association of American Railroads (“AAR”), the American Petroleum Institute (“API”), and the Utilities Telecom Council (“UTC”) regarding this proposal. None have expressed opposition to the PEBB concept, which is responsive to the long-standing position of API and UTC that their members should have access to broadband spectrum for systems designed to meet their specific requirements. Indeed, they have provided detailed comments on this Petition, which have been incorporated into the proposal. They also have identified certain issues that will need to be explored thoroughly before they can support the PEBB concept unequivocally, all of which are issues that the Petitioners agree must be vetted during the rulemaking process:

- Assurance that there will be adequate protection to adjacent in-band and out-of-band narrowband systems from a 900 MHz broadband allocation.²³
- Further clarification of the FCC’s “Comparable Facilities” standard to confirm that it requires funding of all reasonable costs incurred in realigning incumbent systems to other frequencies, including, specifically, the internal costs associated with realignment and, if necessary, the provision of equipment and sites to achieve comparability.

²³ At a recent meeting convened by SouthernLINC Wireless and attended by Sensus USA, Inc. (“Sensus”), Southern Company, and PDV, the parties discussed a variety of approaches that, individually or collectively, could mitigate the potential system performance impact on smart grid systems manufactured by Sensus and deployed in the Narrowband PCS spectrum at 940-941 MHz by Southern Company and CII utilities (e.g., electric, water and natural gas distribution utilities) in other markets that is directly attributable to the presence of 900 MHz PEBB operations. The parties have agreed to work collaboratively to analyze a range of technical and operational means of addressing this issue, including exploring alternative band plans, and will keep the FCC apprised of their efforts.

- Express confirmation that no licensee will be required to modify its frequencies if Comparable Facilities cannot be provided and inclusion of a mechanism for resolving comparability disputes, if any.
- Confirmation that the PEBB licensee will be obligated to provide priority access on reasonable terms in any broadband build-to-suit contract with a CII entity pursuant to an FCC-defined good faith negotiation process;
- Adoption of a 900 MHz Band freeze only if absolutely necessary and then with the least possible impact on B/ILT entities.

C. Current 900 MHz Band Plan

As noted above, the 900 MHz Band is subdivided into forty (40) ten (10)-channel blocks, alternating between blocks allocated for SMR use, licensed on an MTA basis with a small number of underlying site-based stations, and blocks assigned for B/ILT usage, all of which are licensed as site-based systems.²⁴ This inter-mingling of SMR and B/ILT blocks is irrelevant for traditional conventional or trunked systems. 900 MHz equipment is designed to accommodate frequencies anywhere within the band as part of an integrated system. There even are advantages to having separation between frequencies, as it facilitates the combining of multiple channels in an antenna array.

However well-suited this configuration is for traditional PLMR operations, it cannot support a broadband deployment. Current broadband technology requires a minimum of 1.4/1.4 MHz of contiguous spectrum for each channel. Although PDV, the predominant, nationwide 900 MHz licensee, holds an average of two hundred forty (240) 12.5 kHz channels in the top twenty (20) markets (as well as substantial spectrum outside those markets), its 3/3 MHz equivalent channel position is not contiguous. Neither PDV nor other 900 MHz Band PLMR licensees can

²⁴ The ten (10)-channel B/ILT blocks often are broken up into multiple licenses within an area held by different entities, since the number of channels assignable to each applicant is based on its mobile loading representation.

migrate to broadband technology, even if they agreed to do so collaboratively, without a fundamental realignment of the 900 MHz band.

D. 900 MHz Band Realignment

The Petitioners consider this already allocated and substantially utilized 900 MHz Band a prime spectrum opportunity for broadband service dedicated to serving this segment of the wireless community. For the reasons described above, enterprise entities have requirements that are not met on CMRS broadband networks. Despite efforts by API and UTC, in particular, to seek greenfield spectrum for CII broadband operations, the urgency of this requirement has compelled the Petitioners instead to request a realignment of the existing 900 MHz spectrum. The proposed realignment will allow for both broadband and narrowband operations in this spectrum as described herein. It will preserve the right of all incumbents to continue operating narrowband equipment if that is their preference and their right to reimbursement for all reasonable costs incurred if their frequencies need to be modified.

1 Proposed 900 MHz Band Plan

Attached Exhibit A depicts the current band plan and Petitioners' post-realignment band plan proposal. It is important to recall that all the SMR channels in this band have been auctioned already by the FCC. SMR MTA licenses were issued to the auction winners, primarily Sprint, and now are held by PDV and a handful of other entities. These auctioned MTA licenses, once realigned within the band, will provide the foundation for the broadband allocation.

As proposed, the PEBB allocation would be a single two hundred forty (240)-channel license (898-901/937-940 MHz)²⁵ issued on an SMR MTA basis, while the spectrum below

²⁵ The Petitioners recognize that the rules governing the PEBB must ensure that it is a compatible neighbor both to narrowband 900 MHz licensees below 898/937 MHz and to those operating in the band immediately above 901/940 MHz. The protection requirements of adjacent 900 MHz narrowband systems are well known, and discussions have

898/937 MHz would remain available for both site-based and geographic narrowband operations. This can be accomplished in large part by allowing MTA SMR licenses on frequencies below 898/937 MHz to exchange those licenses for equivalent MTA licenses on heretofore site-based B/ILT spectrum above that channel, subject to the conditions detailed below. The vacated MTA spectrum, as well as site-based B/ILT channels held by PDV below 898/937 MHz in markets where it is assigned the PEBB license, would be reserved for site-based systems moving from B/ILT channels above 898/937 MHz. However, to maximize the efficiencies of broadband, the Petitioners recommend that 40 B/ILT channels be included in the PEBB allocation for the total two hundred forty (240)-channel authorization. Since an average of forty (40) B/ILT channels or more already have been converted to SMR use in at least the top twenty (20) markets in the country, adding this capacity to the PEBB license in each MTA will not reduce the available B/ILT channels but will reflect the current state of the band.²⁶

The PEBB allocation (898-901/937-940 MHz) must be issued as a single authorization to derive maximum efficiency from this 3/3 MHz allocation. It should be awarded in each MTA to the entity already holding at least fifteen (15) of the twenty (20) geographic licenses in that MTA.²⁷

The license would be issued subject to the following conditions:

- The PEBB licensee would be required to fund the relocation to comparable facilities (as defined in FCC Rule Section 90.699, including the same quality of

been initiated regarding the needs of users operating in the 940-941 MHz band. All incumbents will be afforded every protection against interference to which they are entitled under the FCC's rules. *See* n. 23 *supra*. To the extent that cooperative testing is needed to determine how best to ensure that adequate protection will be provided, PDV is committed to participating in that testing and would endorse FCC oversight of the process if appropriate. Obviously this important issue will need to be examined fully and resolved during the rulemaking proceeding.

²⁶ Although these channels currently are licensed on a site-specific basis and, under the proposal, would be converted to an equivalent number of geographic channels, Sprint's site-based licensing process was so extensive as to make the channels unassignable to third parties, except well outside urban cores where substantial numbers of other B/ILT channels remain available. The cost of licensing these site-based systems, including frequency coordination and FCC filing fees, was not insignificant given the number of authorizations involved.

²⁷ In the very small number of markets where no MTA licensee holds fifteen (15) authorizations, the Petitioners recommend a PEBB licensee selection process as described below.

service as the facilities prior to relocation (“Comparable Facilities”) and any other criteria the FCC believes appropriate for this spectrum) below 898/937 MHz of all site-based B/ILT licensees in the PEBB allocation, as well as any MTA licensees that wish to continue operating narrowband systems. Comparability for this purpose would include ensuring that the licensee experienced no reduction in system capacity, coverage or signal strength within its coverage area. If there are instances in which providing Comparable Facilities requires additional equipment, such as antennas, combiners, or even additional sites, that cost would be borne by the PEBB licensee. Any disputes regarding the comparability of facilities for members of API or UTC would be referred for resolution to the appropriate organization. MTA licensees above 898/937 MHz that do not wish to be moved to lower spectrum would negotiate an arrangement with the PEBB licensee, including assuming responsibility for their *pro rata* portion of the relocation costs.

- Should the PEBB licensee be unable to provide Comparable Facilities to a licensee above 898/937 MHz, that licensee would not be required to modify its system in any way and its continued narrowband operation would receive appropriate interference protection from broadband operations in adjacent markets.
- The PEBB authorization would include a condition requiring the licensee to offer a build-to-suit broadband solution to any requesting CII or B/ILT entity. The broadband solution offered by the PEBB licensee would offer priority access to CII customers. Negotiations would be subject to a good faith obligation applicable to both parties.

2 Proposed Realignment Sequence

The Petitioners recommend the following sequence to facilitate the proposed band realignment:

- (a) The PEBB licensee in each market is identified.
- (b) Other MTA licensees above 898/937 MHz elect to either (i) contribute their spectrum rights to the PEBB pursuant to negotiated agreements with the PEBB licensee or (ii) relocate to a vacated MTA Block below 898/937 MHz with the relocation costs paid by the PEBB licensee.
- (c) B/ILT licensees above 898/937 MHz are advised of the spectrum below 898/937 MHz on which they will be given Comparable Facilities and to which they will be moved with the relocation costs paid by the PEBB licensee.

B/ILT and SMR MTA licensees below 898/937 MHz are unaffected by the proposed band realignment and may not have their current quality of service affected by the relocation of licensees from above 898/937 MHz.

It is expected that PDV will be the PEBB licensee in most MTAs because of the extensive MTA holdings Sprint purchased from the FCC at auction and through subsequent secondary market transactions, which spectrum rights have been purchased by PDV and assigned to it from Sprint following FCC consent to the assignment. There are seven (7) MTAs in which neither PDV nor any other MTA licensee holds at least fifteen (15) of the twenty (20) geographic licenses. There, the Petitioners recommend that all MTA licensees be obligated to negotiate to select the PEBB licensee. This could be accomplished in a number of ways, including by creating a new entity in which all the parties participate, subject, of course, to FCC approval. Because these parties will hold varying numbers of MTA blocks within the market, the process should be designed to motivate all to negotiate in good faith. One powerful inducement would be a condition that no PEBB license would be issued in an MTA until a negotiated settlement was reached; absent agreement, the current band plan would be retained. While that outcome would be most unfortunate and would penalize potential broadband users in the market, the Petitioners believe it is sufficiently draconian to cause the parties to reach agreement.

3 Proposed Realignment Process

While all band realignments involve a certain amount of disruption and cost (which costs in this instance will be paid by PDV or whatever entity holds the PEBB license for a particular MTA), the Petitioners are confident that a 900 MHz realignment can be accomplished with relatively minimal difficulty. First, the Petitioners have not identified any 900 MHz equipment that is limited to operating on only a subset of channels in the band. Thus, no equipment will need

to be replaced; all equipment is able to be tuned to alternative 900 MHz frequencies. Second, because public safety licensees are not eligible for 900 MHz spectrum, the extensive interoperability arrangements that are publicly beneficial, but that have complicated the 800 MHz rebanding process, generally are not found in this band. Third, the predominant types of users in this band; *i.e.*, utilities, petroleum companies, large transportation providers, and manufacturing operations, have long urged the FCC to provide for a PLMR broadband allocation because their wireless broadband needs are not met entirely on CMRS. Some are expected to participate in the PEBB through contractual arrangements with PDV. Finally, there are a relatively small number of licensees in the band by comparison with other spectrum, repurposing efforts undertaken by the FCC and the National Telecommunications and Information Administration.

The Petitioners recognize that licensees are highly sensitive to their spectrum environment and that the realignment process needs to be developed and managed by an organization with deep experience in 900 MHz Band frequency coordination and operations. EWA, an organization with decades of experience in the coordination of this and other PLMR spectrum and a detailed understanding of FCC regulations, will be engaged by PDV to handle this process. EWA will provide licensees whose frequencies are to be modified with a pre- and post-realignment description of their co-channel environment. All licensees will receive Comparable Facilities and continue to receive the co-channel protection required by Section 90.621, unless they already are short-spaced on their current frequencies pursuant to a waiver, an exceedingly rare situation. Since most site-based licensees will be moving to channels that today are authorized for an entire MTA, it should not be difficult to replicate their present co-channel environment on the replacement frequencies. If particular systems identify unique requirements that support a different approach, EWA will make every effort to accommodate them.

Once the alternative frequencies have been identified and determined to satisfy the licensee's requirements, the licensee will negotiate a realignment agreement with PDV (or the applicable PEBB licensee) in which PDV or another PEBB licensee will assume all responsibility for the cost of implementing the retuning of the licensee's equipment. The FCC has experience with various models for negotiated reimbursement of "such costs in band restructurings. Because most of these licensees will change frequencies only and will not need to replace or otherwise modify their equipment,²⁸ the negotiation of system comparability and cost should be relatively straight forward. The Petitioners recommend that the FCC use the approach adopted for the "upper 200" 800 MHz channel relocation, a band realignment in which all but a handful of negotiations were completed promptly and without a need for FCC involvement.²⁹ There, the FCC concluded that the benefits of wide-area 800 MHz licensing argued in favor of mandatory negotiation provisions if voluntary negotiations failed.³⁰ The Petitioners submit that, in this instance, access to broadband capability for CII entities on a priority basis, as well as access for all other categories of enterprise users, supports the same approach.³¹

Since PDV will have responsibility for all realignment negotiations and costs in every market in which it is the PEBB licensee, and since it is prepared to move quickly to complete this process, the revised 900 MHz rules should specify a start date for initiation of a one-year voluntary negotiation period for affected licensees that is no more than sixty (60) days after adoption of the

²⁸ Some licensees might require combining equipment to accommodate their replacement frequencies, the cost of which would be assumed by the PEBB licensee.

²⁹ In the Matter of Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, *First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rulemaking*, 11 FCC Rcd 1596 (1995) ("Upper 200 Order").

³⁰ *Id.* at ¶ 73.

³¹ The Petitioners submit that the public interest benefits of greatly enhancing the efficiency of this band by providing broadband capability, with the cost of implementation paid entirely by the PEBB licensee(s), and then encumbering that broadband option with an obligation to offer priority access to CII entities amply justify the 240-channel PEBB allocation proposed herein.

new rules and selection of the PEBB licensee in the MTA. Thereafter, the Petitioners recommend a two-year mandatory negotiation period with the same good faith obligations that were applicable to all parties in the upper 200 relocation process.³² The Petitioners also recommend adoption of the “comparable facilities” definition that was used in that proceeding and that still is memorialized in Section 90.699 as the baseline for the standard applicable to 900 MHz Band licensees.³³

In the upper 200 relocation context, the FCC specifically recommended that the parties begin discussions even before finalization of the rules.³⁴ PDV has begun that effort already and will continue to engage affected 900 MHz licensees during the course of this rulemaking proceeding.

III 900 MHz FREEZE

The ambitious, but in the Petitioners’ opinion essential, undertaking outlined in this proposal must be undertaken in a stable spectrum environment. The Commission has recognized in numerous similar situations that it is not possible to implement structural changes in a band without imposing limitations on the ability of existing licensees and new entrants to modify the spectrum landscape.³⁵ For this reason, the Petitioners recommend that the FCC adopt a freeze on the licensing of 900 MHz Band B/ILT frequencies no later than such time as it adopts a Notice of Proposed Rulemaking in which it proposes specific modifications to the 900 MHz Band rules consistent with the instant proposal.³⁶

³² *Id.* at ¶ 79.

³³ 47 C.F.R. §90.699.

³⁴ *Id.* at ¶ 75.

³⁵ *See e.g.*, “Auction 94 Freeze Announced for Certain FM Applications and Rulemaking Filings,” *Public Notice*, 27 FCC Rcd 10903 (MB 2012); *see also* Amendment of the Commission’s Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, ET Docket No. 95-183, *Notice of Proposed Rulemaking and Order*, 11 FCC Rcd 4930 at ¶ 124 (1996). The Commission also has recognized that freezing the acceptance of applications for new systems often is necessary prior to a band restructuring to deter the filing of speculative applications from entities that hope for a financial gain from establishing a spectrum position in anticipation of the restructuring.

³⁶ *Id.*

In the interim, however, the Petitioners also urge the FCC to monitor carefully the volume and quality of applications received for 900 MHz Band B/ILT frequencies. In particular, the Commission should be alert to applications from parties whose eligibility for the channels requested is questionable. EWA, and it believes other FCC-certified Frequency Advisory Committees, would be pleased to assist the Commission in this effort to prevent purely speculative applicants with no legitimate basis for eligibility from acquiring 900 MHz spectrum, in the hope that they subsequently will be paid to relinquish it by a PEBB licensee. While no licensing freeze should be adopted without a compelling public interest justification, the FCC is familiar with the unfortunate fact that a proposed band realignment sometimes results in an influx of such applications, to the detriment of qualified users with a legitimate need for the spectrum in question, as well as to the realignment itself.

Should that happen, the Petitioners recommend that the FCC first reinstitute the previous, relatively incumbent-friendly freeze on 900 MHz B/ILT spectrum. They do not make this recommendation lightly as it unquestionably will impact the use of these frequencies by at least some members of AAR, API, EWA, and UTC. However, the Petitioners are persuaded that the impact will be tolerable and outweighed by the benefit of protecting the spectrum from speculative parties. That freeze recognized the interests of incumbents that already had invested in operational systems. It permitted not only the assignment of licenses, but also the “modification of existing facilities.”³⁷ Thus, licensees that needed to relocate stations or add frequencies were permitted to do so. This allowed them to respond to normal marketplace requirements without being inhibited by the freeze. On the other hand, they were not permitted to establish “new facilities,” those determined not to have an operational nexus to already licensed systems. While not perfect, this

³⁷ 900 MHz Freeze Order at n. 6.

balance satisfied the needs of most PLMR entities even though the freeze lasted almost a decade. Based on this experience, the Petitioners urge the FCC to be vigilant in monitoring 900 MHz B/ILT application activity and to reinstate the 900 MHz B/ILT freeze if warranted.

IV CONCLUSION

The Communications Act mandates that the FCC report annually on “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”³⁸ The Commission has vigorously pursued policies that have enabled it to document solid progress in this critical area as it relates to the general public.

A realignment of the 900 MHz Band will advance this same objective. Without allocating any new spectrum to the business enterprise and CII PLMR community and without disenfranchising any incumbent licensees, the FCC will increase the efficiency of the existing spectrum and will enable enterprise users to access advanced telecommunications capability in a build-to-suit model tailored to meet their stringent and specialized requirements.

For these reasons, the Petitioners urge the Commission to proceed promptly to initiate a rulemaking proceeding consistent with the approach proposed herein.

³⁸ 47 U.S.C. § 1302.

EXHIBIT A

