



## EXECUTIVE SUMMARY

In its Comments Peak Relay Incorporated first attempts to convey the factors which make NPSPAC Region 5 and its Sharing Zone different and more complex an operational region than other regions of the United States. PRI then highlights those provisions in the instant FCC proposals which do not comport well with this region's needs, and as a consequence it then advances alternate proposals to better satisfy both the Commission's goals and the region's unique needs.

Above everything else, PRI urgently advocates the retention of the use of 12.5 kHz "offset" channels in the Sharing Zones. Without the continued use of these channels, licensees in Region 5 and especially in the Sharing Zone face new and unprecedented challenges of kinds which, to date, the use of the offset channels has greatly minimized. The benefits of the offset channels include a considerable expansion of the number of usable 800 MHz channels in a region which would otherwise be chronically short of channels, and the large degree of minimization of the problems of co-channel operation within the region. PRI has shown that the claim of "efficiencies" arising from the elimination of the use of offset channels is unjustified by the facts, and in any case would be minor compared to the problems arising from their elimination.

PRI expresses its concerns about the Commission's apparent unfairness in the reallocation of the limited set of US-primary channels among the various license classes to be made available in the Sharing Zone, with some classes apparently prospering while others appear to have been removed entirely during the process. PRI raises the potential prospect of the relocation of these "missing" license classes to other PLMRS frequency bands, the most likely of which would be the 900 MHz band. The factors governing the use of the 900 MHz band, notably in Region 5, are discussed. PRI will express in advance its firm opposition to this particular kind of relocation.

PRI then calls for an eventual "narrowbanding" of the entire PLMRS 800 MHz band across the country, thus bringing its channel utilization raster into conformance with both the practice on other PLMRS frequency bands and the current state of radio engineering art. Finally, PRI proposes, in the event that the continued use of the offset frequency bands is not authorized, that the "rebanding" process and assignment of new channels be carried out first and completely for licensees within the Sharing Zone before any non-Sharing Zone channels are assigned. This is solely to promote fairness and equity for licensees within the Sharing Zone, who face a two-to-one handicap in obtaining new channels compared to regional licensees located outside the Sharing Zone.

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## INTRODUCTION AND QUALIFICATIONS

1. These Comments on WT Docket 02-55 are submitted by Peak Relay, Incorporated (“PRI”) of Valley Center, San Diego County, California. PRI<sup>1</sup> and its officers and staff have been active in the FCC-regulated Private Land Mobile Radio Service (“PLMRS”) industry since before the 1981 authorization of PLMRS 800 MHz operations in its region.<sup>2</sup>

2. PRI has been, is, and will continue to be a licensee<sup>3</sup> of the Commission in the PLMRS, under 47 C.F.R. Part 90 Rules. It currently holds active 800 MHz licenses in Business/Industrial/Land Transportation (B/I/LT) and Specialized Mobile Radio (SMR) categories. These licenses qualify PRI as a Party to this action.

3. At various times PRI has also been a supplier of equipment and service to eligible PLMRS clients, and has accumulated a considerable amount of experience in the operation, maintenance, and repair of 800 MHz radio equipment.

4. Finally, PRI has been both a participant in and an observer of the activities of the PLMRS industry in a specific, intense, and (arguably) unique geographical region of the United States, the NPSPAC Region 5 Sharing Zone, an environment which is not duplicated elsewhere in the geographical areas administered by the Commission. Much practical experience underlies these Comments, experience of a sort which has not typically been achieved by regulatory or operational entities elsewhere.

### THE SOUTHERN CALIFORNIA/NORTHERN BAJA CALIFORNIA 800 MHZ OPERATING ENVIRONMENT IS UNIQUE

5. In order to understand the proposals that PRI will advance in the instant Matter, it is necessary first to understand in detail the actual operating environment on the 800 MHz PLMRS band in this unique region, and especially the conditions which exist, day-after-day, year-after-

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<sup>1</sup> Including its predecessor entities

<sup>2</sup> NPRM at #11

<sup>3</sup> Under a partnership agreement

year for licensees in the NPSPAC Region 5 Sharing Zone, i.e., licensees in San Diego and Imperial Counties. The Commission indicates some knowledge of this.<sup>4</sup> However, it is not apparent from the Commission's NPRM<sup>5</sup> that it has fully thought through the implications for Region 5 of its own proposals.

6. In these Comments PRI first presents this "backgrounder" narrative about the actual operating conditions in Region 5, then reviews the Commission's major proposals, and finally presents its own proposals for achieving at least a modest degree of parity and equity for all licensees in the region.

7. 800 MHz PLMRS licensees in San Diego and Imperial Counties have special operating considerations and burdens placed upon them that, simply, do not exist for equivalent licensees in other regions of the country. Generally, these burdens fall under two different classifications, "geographical" and "transmission/propagation."

8. The San Diego-Carlsbad-San Marcos Primary Statistical Area ("PSA"), with a population greater than 3,000,000 (not including rural San Diego and all of Imperial County), is the 17<sup>th</sup> largest PSA in the United States.<sup>6</sup> In and of itself, this population density makes these two counties major users of PLMRS spectrum, a situation which is further exacerbated by the large land distances which exist in the southwest region of the United States and by the specific "mobile culture" that is characteristic of southern California. There is a very large demand for "wireless communications" in these counties, much of which demand is centered on the 800 MHz. band.

9. In issuing the text of WR Docket 02-55 the Commission seems to have made some critical assumptions about the present utilization of the 800 MHz PLMRS allocation within the Region 5 Sharing Zone, which assumptions are not borne out in fact, PRI asserts.

10. Most of the text, and almost all of the tabular material in the NPRM would present, to the uninitiated reader, the impression that the only remaining 800 MHz PLMRS operations in the

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<sup>4</sup> NPRM at #11

<sup>5</sup> NPRM at #s 19 - 23

<sup>6</sup> United States Census Bureau, July, 2011

Sharing Zone are those of the Public Safety and ESMR entities.<sup>7</sup> This is most assuredly not the case. Numerous licenses presently exist within the Sharing Zone in the General, Business, Industrial/Land Transportation, and SMR categories, and there is no evidence that such activities will diminish or cease in the future. Yet the Commission's proposal<sup>8</sup> makes no provision for these existing licensees! It accommodates essentially only Public Safety and ESMR activities.

11. PRI verifies that the General, Business, Industrial/Land Transportation, and SMR activities are on-going and healthy. It might be naively assumed that virtually all "mobile dispatch" activities in the region have been migrated to the Public Mobile Service (i.e., "cellular telephone") and that the former private mobile dispatch requirements are now moot. For a number of reasons this is a false assumption. Central mobile dispatch to individual mobile stations, and especially to fleets and sub-fleets, can be simpler, more rapid, and certainly less costly than would be purchased cellular telephone service used for the same purpose. Many entities, large fleets and small businesses, continue to use 800 MHz PLMRS communications for exactly these reasons. Their needs have to be accommodated during rebanding, and not blindly dismissed through Commission myopia.

12. The San Diego-Carlsbad-San Marcos PSA is geographically "sandwiched" between the nation's second largest PSA, Los Angeles-Orange County,<sup>9</sup> immediately to its north, and the largest northern Baja California (Mexico) population center, Tijuana-Mexicali-Ensenada, to its immediate south. In both cases, the geographical descriptor "immediate" is highly germane: vehicles operated by San Diego/Imperial County 800 MHz PLMRS licensees can, and often do, operate within literally tens of feet of these political boundaries! There are no natural "buffer zones," i.e., rural lands, lakes, rivers, bays and oceans, etc., which form breaks between the population centers. Signals do not naturally terminate over unoccupied lands or waters in this region. A PLMRS signal which is usable in downtown San Diego is very likely also to be usable in downtown Tijuana, and signals which are intended for the City of Orange in Orange County can often be received in the City of Oceanside in San Diego County. No amount of design

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<sup>7</sup> *see especially NPRM, Appendix C-4 text for the Sharing Zone proposal*

<sup>8</sup> *see especially NPRM, Appendix C-4 text for the Sharing Zone proposal*

<sup>9</sup> United States Census Bureau, July, 2011

engineering,<sup>10</sup> and, more importantly, no ingenious construction of the 47 **C.F.R.** Part 90 Rules can fully mitigate this physical reality.

13. Were the above considerations somehow insufficient to prompt detailed study and sensitively-crafted proposals, an additional, independent consideration further compounds the existing problems. The entire southern California/Baja California operations region is effectively connected together in its VHF/UHF PLMRS operations by a regional “atmospheric coaxial cable.”

14. The region is regularly affected by natural temperature inversions that exist in the first few thousand feet of the atmosphere above the surface of the earth.<sup>11</sup> The effects of these inversions on radio wave propagation have been studied and understood for decades. Under inversion conditions the warmer<sup>12</sup> upper layers of the troposphere result in a slightly faster propagation speed of radio frequency electromagnetic waves relative to their speed at ground level. The result is a refraction of radio waves toward the surface of the earth under the inversion conditions.<sup>13</sup> Rather than continuing in a direct line out to the horizon and then out into free space, the refracted waves continue, approximately, to follow the curvature of the earth. The radio signals, under these conditions, are propagated out to land areas past the horizon, more distant compared to where they propagate when inversions are not present. Thus even far-distant transmitters can contribute to the production of local interference.

15. Whereas the region already has large numbers of PLMRS licensees operating in a constricted land area,<sup>14</sup> the “regional coaxial cable” effect augments the existing problems and adds even additional stations from even farther distances to the “stew pot.”

16. A citation will attest to the severity and extent of this second problem. As long ago as the decade of the 1970s, all<sup>15</sup> of the San Diego County operators of “multiply-licensed 450 MHz base stations” jointly petitioned the FCC for relief from continuing inversion-created interference

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<sup>10</sup> Save at exorbitant costs!

<sup>11</sup> These inversions result in, among other things, the production of photochemical air pollution [i.e., smog] and the many hazards that result therefrom.

<sup>12</sup> Relative to the air temperature at ground level

<sup>13</sup> A related effect is responsible for the production of “mirages” in desert areas.

<sup>14</sup> The three metropolitan areas listed *supra*

to their clients' operations from similar, co-channel Los Angeles-Orange County operators. As noted in the petition, at times during the summer the communications by San Diego County licensees through San Diego County base stations were completely disrupted. The physical conditions which underlay the 1970s petition remain unchanged today. They will have to be addressed.

17. Thus proposals involving NPSAC Region 5 800 MHz operations must recognize and must attempt to deal with these two regional congestion problems. Region 5 has been perpetually deficient in meeting the demand for PLMRS 800 MHz communications; existing usable and re-usable channels do not exist. PRI hopes that adopted solutions will at least attempt to mitigate these problems, rather than inadvertently to compound them. This hope underlies our proposals, and we expect that the Commission will also fully embrace it.

THE COMMISSION'S PROPOSALS, ALTHOUGH PERHAPS WELL-INTENDED, DO NOT  
ADEQUATELY ADDRESS EXISTING REGION 5 PROBLEMS

18. In the instant Docket, the Commission has advanced a series of proposals for dealing with the complex frequency usage situation that exists along the US-Mexico international border. PRI believes that the Commission has attempted to be thoughtful and deliberate in their construction. Regrettably the Commission cannot, and does not, possess the experience "on the ground" within the admittedly-unique NPSAC Region 5 to consider all the ramifications of their own proposals, and to do so toward the goal of maximizing the peaceable use of the frequency band.....on both sides of the border. Thus PRI will first discuss the Commission's proposals as preparation for presenting its own.

19. As stated *supra*, PRI is concerned primarily with the ability of licensees in the Sharing Zone of NPSAC Region 5 to operate successfully in an extremely difficult environment, although we contend that solutions that PRI will propose for licensees in San Diego and Imperial Counties should work well in less-congested NPSAC border regions as well.

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<sup>15</sup> Except for one

20. The Commission’s primary approach to the problem of operating within the Sharing Zone is embodied in the heading for Section III. A. 1. of this NPRM: “Standard Channel Centers for Licensees in Sharing Zones.” That is to say, the existing practice<sup>16</sup> of establishing operations in Sharing Zones that are on channels “offset” by 12.5 kHz from the channels used in the non-Sharing Zone areas of the country and in Mexico is to be ended. All operations, both within and without the Sharing Zones, would be conducted on a single, unified, channel raster plan. The Commission then presents a weak “efficiency” justification for its proposal.<sup>17</sup>

21. PRI understands the appeal which its own proposal presents to the Commission: administration and regulation of the channels and licensees becomes proportionately easier, since the total number of channels in the border region is thereby decreased by almost 50%. No longer would a small group of US licensees require “special administrative treatment” because they are operating on “different” channels.

22. But PRI also believes that the Commission has fundamentally failed to understand the “situation on the ground” that led it originally to establish the use of the offset channels in the Region 5 Sharing Zone in 1981!<sup>18</sup> As described *supra*<sup>19</sup>, southern California has both geographical and transmission/propagation conditions which do not exist elsewhere. It is these considerations which led to the establishment of use of the offset channels in 1981. The passage of the intervening three decades has not served to eliminate these problems; indeed instances of co-channel interference in southern California (on PLMRS frequency bands other than 800 MHz, which other bands do not use “offset channels) have only increased, as have instances of co-channel interference between stations on opposite sides of the international border. The use of the offset channels in the Sharing Zones have served to minimize at least a major sub-set of the problems at very little cost (*vide infra*) to licensees. To eliminate the availability and use of the offset channels on the basis of specious “administrative efficiencies” would be extremely counterproductive.

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<sup>16</sup> NPRM at #11

<sup>17</sup> NPRM at #13

<sup>18</sup> NPRM at #11

<sup>19</sup> PRI Comments, #s 5 - 17

23. The Commission contends<sup>20</sup> that licensees are subject to “inefficiencies” by the present need, for those (unstated number of) licensees who are operating both above and below the borders of the Sharing Zones, to “program an additional set of [offset] channels into their radios.” PRI, with its long experience in providing equipment and service to 800 MHz PLMRS band clients, can directly rebut this point. The Commission seems to be unaware of how fleets of 800 MHz radios are provisioned with their licensee’s operating channels. The following describes how this is done.

24. A table of operating data is constructed within a radio application computer program, containing the list of all operating frequencies and other ancillary data to be used by the mobile radios. Any “requirement” for an additional set of operating channels for use on the opposite side of the Sharing Zone boundaries is met by the insertion of the additional channels into the table. This insertion process requires only an extra minute or two of data entry work to add the additional frequencies into the table.....and this additional minute is needed just once, since the same table is used for all radios in the fleet or sub-fleet! Edited versions of the master table may easily be computer-constructed for use with sub-fleets, if needed.

25. No changes in the normal procedure are needed to load the [augmented] data into the individual radios, and the additional Sharing Zone channel data going into the radios would increase the data loading time by only a few seconds per radio, at most. Thus the purported “inefficiencies” do not constitute an insufferable burden to the licensees.

26. But what about the “benefits” accruing to the licensees from the use of the offset channels, which benefits are purportedly “outweighed” by the inefficiencies?<sup>21</sup> The Commission itself acknowledges<sup>22</sup> that co-channel operations between southern California licensees residing above and below the NPSPAC Region 5 Sharing Zone boundary are not feasible. Furthermore, the Commission’s own requirement for 110 km minimum separation between co-channel base stations effectively eliminates the possibility for this kind of co-sharing over much of the region. Finally, the “regional coaxial cable” provides even more impetus for not attempting co-sharing.

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<sup>20</sup> NPRM at #13

<sup>21</sup> NPRM at #13

<sup>22</sup> NPRM at #11

The overall effect of all of this is to ensure that, for many individual frequencies, a channel used in one portion of the region cannot be re-used in many of the remaining portions.

27. The use of the offset channels under the present Rules has, indeed, been an expeditious technique for alleviating at least a part of this seemingly-intractable deficiency of channels. The presently-authorized 800 MHz channel bandwidth is 25 kiloHertz. But fundamental transmission theory (and present practice on other PLMRS VHF/UHF frequency bands)<sup>23</sup> shows that the kind of transmissions which are generated under the presently-authorized emissions mask could be satisfactorily contained in no more than 16 kHz of occupied bandwidth. Thus under the present Part 90 Rules, approximately 9 kHz of bandwidth allocated to each PLMRS 800 MHz channel<sup>24</sup> is, effectively, unused. And the rebanding of PLMRS channels under the current and proposed emission mask merely perpetuates the waste of usable spectrum. That is the real “inefficiency” in the proceeding.

28. The institution of the “offset channels” achieves two beneficial goals, through what amounts to an actual but unacknowledged kind of “narrowbanding” process! First, through reclamation of the “wasted” bandwidth it effectively doubles the total number of channels which can be used somewhere in this most-crowded of operational regions. If, as will be demonstrated by PRI *infra*, the restructuring plan proposed in the instant Docket does not contain a sufficient number of operating channels even to satisfy the existing demand, at least by retaining the offset channels no presently-available channels will be lost!

29. Second, use of the offset channels in the Sharing Zone gives incumbents a “fighting chance” at successful operations without the historic and well-demonstrated problem of channel co-sharing interference in a unique region which cannot support co-sharing. As has been demonstrated practically over the past three decades, operation in the Region 5 Sharing Zone on the offset channels has been reasonably successful. Admittedly the use of the offset channels is not an optimum solution, since for every channel there are a total of 7 kiloHertz of signal overlap between a “main channel” and its two associated offset channels. Ultimately, new radios designed for operation on “narrowband” channels will be needed; *vide infra* for PRI’s additional

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<sup>23</sup> 47 C.F.R. #2.202(g)

<sup>24</sup> Excluding the specialized NPSPAC 12.5 kHz channels allocation

thoughts about narrowbanding. But there is a high degree of interference avoidance now with the current offset channel configuration; PRI informally estimates this to be about a twenty decibel improvement over the co-channel usage case. This crucial margin (for Sharing Zone licensees) will be entirely lost if the offset channels are eliminated.

30. Thus, PRI asserts, the “efficiencies” that would be gained by elimination of the use of the offset channels would be greatly swamped by the loss of unused bandwidth and the additional operational difficulties across the entire NPSPAC Region 5 which would be generated, if the instant proposal is adopted. This, PRI contends, is a very poor trade-off at best!

31. Retention of the offset channels is crucial to the continued successful use of the PLMRS 800 MHz channels in Region 5, and PRI forcefully urges their retention!. PRI’s further proposals consider both the case when the use of the offset channels is retained in the Sharing Zone, and the case when it is not retained. Very different results accrue to each case.

#### PRI WILL PROPOSE ALTERNATE APPROACHES FOR USAGE OF CHANNEL ALLOCATIONS WITHIN THE SHARING ZONES

32. PRI wishes to begin its discussion of alternate approaches for usage of the authorized Sharing Zone spectrum with an examination of the Commission’s own data. Appendix I of these Comments reproduces Commission-produced data taken directly from the text of the NPRM.<sup>25</sup>

33. It can immediately be seen that the “rebanding” does not change the total limited amount of primary spectrum available to US licensees within the Sharing Zone. PRI wishes to emphasize again that this amount of treaty-authorized spectrum is all that eligibles within the Sharing Zone have available for their use. On a 25 kHz-equivalent channel bandwidth basis, the total number of channels available for assignment within the Sharing Zone before and after the transition remains essentially constant. But the manner in which these channels are allocated is far from unchanged by the rebanding process!

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<sup>25</sup> NPRM at Appendix C-4

34. If the use of the offset channels is ended, it is immediately apparent that several radio services classes have “done quite well” under the rebanding proposal.<sup>26</sup> “Priorities” in allocating the available Sharing Zone channels seem to have been given to conventional Public Safety, whose total number of allocated channels remains unchanged, to NPSPAC, which has seen an almost doubling increase of channels<sup>27</sup> from 63.5 to 117.5, and to ESMR, increasing from zero to 110 channels. Moreover, the presently-allocated channels for several categories, including Business, Industrial/Land Transportation, and SMR have completely disappeared!<sup>28</sup>

35. With this proposed Commission action, PRI is vitally concerned for its own licenses, for all of which no 800 MHz migration path seems apparent. What is the Commission’s intention here? How can PRI and the other 800 MHz licenses within the Sharing Zone be made whole if the Commission pursues this action?

36. The Commission has stated,<sup>29</sup> although not in reference to the instant quandary, that some incumbents may be moved elsewhere, out of 800 MHz spectrum, as a result of rebanding, presumably as a means of addressing channel shortages. PRI asks directly, “Is this the Commission’s [unstated] intent for the B/ILT/SMR incumbents in NPSPAC Region 5?” In the event that our conjecture is correct, PRI will now directly address this prospect.

37. The mostly likely “relocation spectrum” which the Commission would propose is the 900 MHz PLMRS frequency band (896-901 and 935-940 MHz).<sup>30</sup> PRI’s permanent, unchanging response to such a move is that these proposed replacement channels are wholly unacceptable, for two different, independent reasons!

38. First, if carried out on a “one-for-one” channel basis between the 800 and 900 MHz bands, they represent a loss of channel equity. The present 800 MHz channels<sup>31</sup> are authorized on a 25 kHz total bandwidth basis. The existing 900 MHz (presumably) replacement channels

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<sup>26</sup> If the use of the offset channels in the Sharing Zones remains authorized, this argument is not relevant.

<sup>27</sup> 25 kHz-equivalent bandwidth

<sup>28</sup> The General category also receives an increase in the number of its channels, but the increase is far smaller than the number of channels lost to Business/ILT/SMR

<sup>29</sup> NPRM at #5

<sup>30</sup> 47 C.F.R. #2.106

<sup>31</sup> Including the “offset channels” in the Sharing Zone

are authorized on a 12.5 kHz total bandwidth basis. The fundamental Shannon Channel Capacity Theorem<sup>32</sup> from the field of Information Theory clearly shows that the maximum information transfer *rate*<sup>33</sup> in a single channel is directly proportional to the total channel bandwidth. Thus the exchange of 25 kHz-authorized bandwidth channels for 12.5 kHz-authorized bandwidth channels represents a direct halving of channel capacity. PRI and other incumbents who accept 900 MHz replacement channels would also be accepting a halving of their total available channel bandwidth, and with that a potential halving of their economic return on investment. In contrast, other eligibles who are re-accommodated on the 800 MHz PLMRS band during rebanding have not suffered such an economic loss. This, PRI contends, is unfair and discriminatory, and it is completely unacceptable!

39. The second reason for PRI's objection is operational. Historically, Region 5 communications in a number of Services operating above 900 MHz have been disrupted by interference generated by..... the United States Department of Defense! Such disruptions have rarely occurred below 900 MHz, thus preserving the value of licenses in the spectrum below 900 MHz relative to licenses in the spectrum above 900 MHz.

40. In NPSPAC Region 5, for a number of years<sup>34</sup> United State Navy fleet operations by vessels employing shipboard SPS-49 radar sets in the section of the Pacific Ocean proximate to the Region 5 coastline have randomly, repeatedly, and severely affected the routine operations of a number of non-governmental<sup>35</sup> radio services which operate on frequencies above 900 MHz. However, equivalent Navy-created interference has seldom been observed on PRI's 800 MHz channels.

41. Moreover, the use of the radio frequency spectrum by the United States Department of Defense is not regulated by the FCC; such operation occurs under the purview of the NTIA, an independent agency under the Executive Branch of the Federal Government. Over the historical

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<sup>32</sup> See C. E. Shannon, "A Mathematical Theory of Communications," *Bell Sys. Tech. J.*, Vol. 27, 379-423, July 1948; 623-656, Oct. 1948. More advanced treatments of this field are available.

<sup>33</sup> And hence the maximum channel "capacity"

<sup>34</sup> PRI has written unclassified governmental documentation acknowledging the problem dating as far back as the year 1989.

<sup>35</sup> And hence FCC-regulated

course of the problem the FCC has consistently provided valuable problem-resolution technical assistance for its licensees, while correctly explaining that it does not have the authorization to control the Navy's actions.

42. Thus, if PRI were to accept replacement spectrum above 900 MHz for its existing licenses, such spectrum would be provided without any assurance from the Commission, either explicit or implicit, about its "fitness for use," since the Commission is powerless to provide enforcement against known interference generated by the United States Navy,<sup>36</sup> even when such interference is in conflict with existing international laws and treaties!

43. For both these substantial reasons, PRI does not support any attempt to substitute its 800 MHz channel holdings with 900 MHz PLMRS channels. Such substitutions might be acceptable in NPSPAC border regions which are not proximate to the coastline of the United States, and hence which are not subject to naval radar interference, but they are not acceptable anywhere in Region 5.

#### "NARROWBANDING" IS PROBABLY THE OPTIMUM SOLUTION TO THE PROBLEMS IN NPSPAC REGION 5

44. The fundamental problem at 800 MHz in Region 5 is a shortage of available PLMRS channels for assignment, which channels can be a) shared equitably between the United States and Mexico, and b) suitably re-used within the region itself to provide additional capacity. Also presented *supra* is the suggestion that the present 800 MHz general channel assignment raster is spectrally inefficient by current standards. In the instant Docket, it is vitally necessary to address these problems.

45. It should be intuitively obvious that the present general channel utilization pattern at 800 MHz is archaic! Occupied bandwidth channels of 25 kHz are no longer required with current PLMRS technology. Thus it should be noted that "mobile relay" channels in current use on all PLMRS mobile relay bands from 30 MHz through 940 MHz except for 800 MHz employ

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<sup>36</sup> And occasionally by foreign-flag naval vessels which also operate SPS-49 radars

authorized bandwidths ranging from 6.25 to 20 kHz.<sup>37</sup> Thus there are no remaining engineering-based requirements for the wide bandwidth channels currently employed at 800 MHz, the same pattern which the Commission's proposals have projected forward into the rebanding!<sup>38</sup>

46. To PRI, it is inconceivable that the Commission would have undertaken the entire rebanding effort without simultaneously establishing a schedule for future "narrowbanding!" Even more important, it is unfathomable that the Commission would attempt to scuttle the small amount of "narrowbanding" that is already in effect, i.e., the use of "offset channels" in the Sharing Zones, which has been so beneficial to all licensees in NPSPAC Region 5 and elsewhere.

47. There are two possible methods for fostering 800 MHz "narrowbanding:" retention of the current use of the offset channels in the Sharing Zones, and establishment of a schedule for the future splitting of all 800 MHz PLMRS channels throughout the entire country. PRI strongly urges re-adoption of the first one, since it is currently in use and thus carries no "implementation costs!" The second method would require substantial time and costs for its implementation, and thus probably cannot be adopted as part of the instant series of Dockets. Nevertheless, adoption of the first process does not preclude an eventual adoption of the second one, and PRI urges that the eventual nationwide narrowbanding process for the 800 MHz band be started quickly. PRI would support this.

#### SHARING ZONE LICENSEES' NEEDS MUST RECEIVE PRIORITY IN THE REFARMING PROCESS!

48. A large remaining uncertainty is the operational implementation process that is proposed to be used during 800 MHz rebanding for NPSPAC Region 5 licensees.<sup>39</sup> This uncertainty is concerned with "right of equal access" to the available rebanded channels by licensees in the

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<sup>37</sup> 47 C.F.R. #90.209

<sup>38</sup> There are, however, licensee operational needs for channels with wider bandwidths, and any Rules adopted in the instant or future Dockets should provide for "bonding" of adjacent narrowband channels at the discretion of the licensee, to achieve wider operating channels.

Sharing Zones. And the uncertainty is directly contingent upon whether the use of the present “offset channels” is continued.

49. If the use of the offset channels is continued, then licensees in the Region 5 Sharing Zone<sup>40</sup> will not be directly competing for available channels with licensees outside the Sharing Zone. They will have uncontested access to the offset channels, and no additional intra-regional conflicts should arise during rebanding. However, should the Commission adopt its instant proposals, then Sharing Zone licensees will be competing directly against non-Sharing Zone licensees for all of the restricted number of US-primary channels, the only ones which are usable within the Sharing Zone. And the Sharing Zone licensees will be at a considerable disadvantage: they have far fewer channels for which they can bid,<sup>41</sup> since no absolute treaty restrictions accrue to non-Sharing Zone channels.

50. To substantiate this disadvantage, it should never be assumed that Region 5 Sharing Zone licensees might, somehow, meet the signal level requirements for secondary operation on the Mexican-primary channels in the Region 5 Sharing Zone<sup>42</sup> and thus gain access to these additional channels. Appendix Two presents a list of the most heavily utilized PLMRS transmitting sites in San Diego County, and the distances to their nearest intersection points on the international border. It should also be remembered that 800 MHz PLMRS mobile operations in San Diego and Imperial Counties can and do occur up to a few tens of feet north of the international border. Operational coverage must still be provided directly to areas in the US that are immediately proximate to the border.

51. It might be argued that those transmitting sites listed in the Appendix which are located close to the international border could be configured with directional antennas transmitting away from the border, in an effort to limit their emission levels at locations within Mexico to acceptable values, and thus allow the possibility of use of the US-secondary channels with Mexican concurrence. PRI asserts that, in the context of “real world engineering,” it is unlikely

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<sup>39</sup> And presumably other regions as well

<sup>40</sup> Except for the NPSPAC services that employ 12.5 kHz allocated channel bandwidths

<sup>41</sup> 9 MHz of primary use spectrum in the Sharing Zone versus 18 MHz of general use spectrum in the non-Sharing Zone

<sup>42</sup> See “United States - Mexico 1994 Protocol,” Article III, paragraph 4

that the necessary signal attenuations at the international border could ever be reached under any practical conditions. Even if this could be achieved, the resulting US land coverage areas would be unacceptable, since licensees' operations extending to the border are required and real signals that are usable at the border do not dramatically attenuate within a distance of a few tens of feet farther south.

52. Conversely, the northernmost San Diego-Imperial Counties transmitting sites already direct their emissions toward the population centers to the south of their locations, and thus toward Mexico, and they cannot employ directionality to meet this goal. Additionally, they have the same requirement to meet for "to the border" coverage. The results of these considerations are that few if any Sharing Zone licensees will ever meet the usage requirements for US-secondary channels, and therefore these Sharing Zone licensees are inherently constrained to operate only on US-primary channels, the numbers of which channels are limited by the international agreement.<sup>43</sup>

53. For exactly this reason of channel scarcity, PRI offers the following proposal in the case where the use of the current offset channels is terminated:

In the implementation of the "rebanding" work, the relocation of all Sharing Zone licensees will be accommodated prior to relocation of any non-Sharing Zone licensees. This procedure will be followed for all classes of licensees in the Sharing Zone.

Because of this proposal's critical importance as a matter of equity and fairness toward the Sharing Zone licensees, PRI proposes that the full allocation procedure for the Sharing Zones be specifically written into the Part 90 Rules accompanying the Report and Order for the instant Docket, and that the procedure be included in the instructions issued to the Transition Administrators.

54. It should be obvious that Sharing Zone licensees must have access to the US-primary channels; they have no other alternative absent the use of the offset channels. Non-Sharing Zone licensees have generally-unencumbered channels awaiting them for which they will receive no additional competition from Sharing Zone licensees. If access to the US-primary channels in the

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<sup>43</sup> NPRM at #4

Sharing Zone is not reserved for Sharing Zone licensees, these same licensees will assume a “two for one” handicap in the general competition for the available NPSPAC Region 800 MHz US-primary channels. The imposition of such a handicap is arbitrary and indefensible!

#### SUMMARY AND CONCLUSIONS FOR THE PRI COMMENTS

55. PRI appreciates the reasons for the deliberate haste which underlie the instant Docket, and it too looks forward to the completion of the transition. Yet, necessary haste is not a justification for doing the rebanding in less than a fair and equitable manner, with all interests being fairly represented.

56. In its Comments PRI has attempted to convey the factors which make NPSPAC Region 5 and its Sharing Zone different and more complex than other regions of the United States. PRI has highlighted those provisions in the FCC’s proposals which do not comport well with this region’s operational history, and as a consequence PRI has advanced alternate proposals to better satisfy both the Commission’s goals and the region’s unique needs.

57. Above everything else, PRI urgently advocates the retention of the use of “offset” channels in the Sharing Zones. Without the continued use of these channels, licensees in Region 5 and especially in the Sharing Zone face new and unprecedented challenges of kinds which, to date, the use of the offset channels has greatly minimized. The benefits from the use of the offset channels include a considerable augmentation of the number of usable 800 MHz channels in a region which would otherwise be chronically short of channels, and the minimization of the problems of co-channel operation within the region. PRI has shown that the purported “efficiencies” to be gained from the elimination of the use of offset channels are unjustified by the facts, and in any case would be minor compared to the problems arising from their elimination.

58. PRI has expressed its concerns about the Commission’s apparent inequity toward the various license classes in the reallocation during the rebanding process of the limited set of US-primary channels available in the Sharing Zone, with some classes apparently prospering while others appear to have been removed entirely during the process. PRI has raised the potential

prospect of the relocation of these “missing” license classes to other PLMRS frequency bands, the most likely of which would be the 900 MHz band. The factors governing the use of the 900 MHz band, notably in Region 5, were discussed. As a result PRI expressed in advance its firm opposition to this particular kind of relocation. PRI then called for an eventual “narrowbanding” of the entire PLMRS 800 MHz band across the country, thus bringing its channel utilization raster into conformance with both the present practice on other PLMRS frequency bands and the current state of radio engineering art. Finally, PRI proposed, in the event that the continued use of the offset frequency bands is not authorized, the “rebanding” process and assignment to new channels be conducted in its entirety first for licensees within the Sharing Zone before any non-Sharing Zone channels are assigned. This is solely to promote fairness and equity for licensees within the Sharing Zone, who face a two-to-one handicap in obtaining new channels compared to licensees located outside the Sharing Zone.

Respectfully submitted,

/s/

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## Appendix 1

### Pre- and Post-Rebanding Channel Allocations in Sharing Zone

<u>Service</u>	<u>Current number</u>	<u>Post Transition number</u>
Public Safety	85 pairs	85 pairs
Bus/ILT	120	00
SMR	83	00
General	12	45
NPSPAC	63.5	117.5
ESMR	00	110
TOTAL	363.5 pairs	357.5 pairs

NOTE: These data represent the number of 25 kHz and, in the case of NPSPAC-allocated channels, 25 kHz-equivalent channels per Service category.

Appendix 2

Closest Point of Approach (miles) to International Border for Heavily-utilized San Diego County Transmitting Sites

<u>Site</u>	<u>Distance (miles) to closest point of international border</u>
Otay Mountain	3 miles
Mt. San Miguel	10
Lyons Peak	10
San Diego Civic Center	13
Mount Soledad	22
Black Mountain	30½
Mount Woodson	31½
Mount Palomar	54