

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

In the Matter of
Amendment of Part 90 of the Commission's Rules
and Policies for Applications and Licensing of Low
Power Operations in the Private Land Mobile
Radio 450-470 MHz Band
WT Docket No. 01-1461
RM-9966

NOTICE OF PROPOSED RULE MAKING

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By the Commission:

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1 This proceeding was initially assigned WT Docket No. 98-182 as part of the Part 90 1998 Biennial Regulatory Review. See Consumer Information Bureau Reference Information Center Petition for Rulemaking Filed, Public Notice, Report No. 2442 (Sept. 28, 2000). For purposes of administrative convenience, we are severing this rulemaking from the Part 90 proceeding and assigning the above-captioned docket number.

## I. INTRODUCTION

1. On September 11, 2000, the Land Mobile Communications Council (LMCC)<sup>2</sup> filed a Petition for Rule Making requesting the commencement of a proceeding to consider revisions to the Commission's Rules and policies for low power, *i.e.*, two watt, operations in the 450-470 MHz band.<sup>3</sup> This *Notice of Proposed Rule Making* seeks comment on the proposals set forth in the LMCC's Petition as well as other matters related to low power operations in the private land mobile radio (PLMR) 450-470 MHz band.

## II. BACKGROUND

2. The Commission has permitted PLMR users in the 450-470 MHz band to be licensed for low power operations—on frequencies 12.5 kHz offset from regularly assignable 25 kHz frequencies often referred to as “offset channels”—for almost thirty years.<sup>4</sup> During this time, these offset channels have been heavily used for certain low power operations such as medical telemetry and remote operation of heavy machinery.<sup>5</sup> However, to promote the more efficient use of regularly assignable PLMR spectrum below 512 MHz, the Commission adopted a new band plan in 1995 under which these 12.5 kHz channels are no longer considered offset channels.<sup>6</sup> Rather, they are regularly assignable channels for high power operations on a primary basis.<sup>7</sup>

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<sup>2</sup> The LMCC is a non-profit association of organizations representing virtually all users of land mobile radio systems, providers of land mobile services, and manufacturers of land mobile radio equipment. LMCC's membership includes all of the Commission's certified Part 90 frequency coordinators. *See* Petition at 1-2.

<sup>3</sup> Land Mobile Communications Council Petition for Rule Making (RM - 9966), filed Sept. 11, 2000 (Petition). The Commission sought comment on the Petition, *see* Petition for Rulemaking Filed, *Public Notice*, Report No. 2442 (rel. Sept. 28, 2000), and one party, Hexagram, Inc., filed responsive comments. *See* Hexagram, Inc. Partial Opposition to Petition for Rule Making, filed November 13, 2000 (Hexagram Partial Opposition). LMCC filed a reply. *See* Land Mobile Communications Council Supplemental Comments, filed on December 14, 2000 (LMCC Supplemental Comments).

<sup>4</sup> The Commission first authorized the use of offset frequencies in the Business Radio Service in 1973. *See* Amendment of Parts 2 and 91 of the Commission's Rules to Permit Medical Telemetry and Other Low Power Uses of Offset Frequencies in the Business Radio Service, Docket No. 19478, *First Report and Order*, 41 FCC 2d 8 (1973). In 1981, the use of offset frequencies was expanded to all eligibles in the PLMR 450-470 MHz band. *See* Amendment of Subpart D of Part 90 of the Commission's Rules and Regulations to Permit the Use of 12.5 kHz Offset Assignments in the 450-470 MHz Band in the Private Land Mobile Radio Services, PR Docket No. 80-605, RM-3569, *Report and Order*, 87 FCC 2d 647 (1981).

<sup>5</sup> *See* Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Services, PR Docket No. 92-235, *Second Report and Order*, 12 FCC Rcd 14,307, 14,338-39 ¶ 60 (1997) (*Refarming Second R&O*).

<sup>6</sup> Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Services, PR Docket No. 92-235, *Report and Order and Further Notice of Proposed Rule Making*, 10 FCC Rcd 10,076 (1995) (*Refarming R&O*).

<sup>7</sup> *Id.*, 10 FCC Rcd at 10,110-11 ¶¶ 62-65. Former offset channels are not regularly assignable for high power operations if designated by the frequency coordinators for low power use. *See* para. 3, *infra*.

3. In adopting the 1995 band plan, the Commission recognized a continuing need for low power operations and provided the frequency coordinators with the authority to identify specific 12.5 kHz channels to be reserved for low power use.<sup>8</sup> In light of their displacement by high power operations, the Commission gave existing low power licensees the option of increasing power on their licensed channel, unless the FCC-certified PLMR frequency coordinators designated it for low power use.<sup>9</sup> The Commission also decided that low power licensees that elected to remain on, or move to, a coordinator-designated low power channel would be elevated to primary status upon providing their station coordinates to the Commission.<sup>10</sup> Before the 1995 band plan rules took effect, however, the Commission granted a request to freeze the acceptance of high power applications for the former 12.5 kHz offset channels.<sup>11</sup> The Commission adopted the filing freeze in order to prevent high power applicants from interfering with existing low power operations until the frequency coordinators had developed a low power channel plan and it established a migration period for those low power users licensed on channels not designated for low power use.<sup>12</sup>

4. In 1997, the Commission consolidated the twenty PLMR services below 512 MHz, including the low power channels, into two pools—a Public Safety Pool and an Industrial/Business Pool.<sup>13</sup> The Commission confirmed the importance of low power channels and gave the frequency coordinators until October 17, 1997, to develop a consensus plan identifying specific frequencies for low power operations in the two pools.<sup>14</sup> In response, the LMCC filed a Low Power Consensus Plan (Consensus Plan) in June 1997<sup>15</sup> that identified specific frequencies for low power use, but the plan also included several provisions that could not be implemented without changes to the Commission's Rules. In August 1997, the LMCC refiled a portion of the Consensus Plan that did not require rule changes.<sup>16</sup> Specifically, the Low Power Plan listed ninety Industrial/Business Pool channel pairs and fourteen Public Safety Pool channel pairs to be designated for low power use. The Commission, however, deferred a decision on acceptance of the

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<sup>8</sup> *Refarming R&O*, 10 FCC Rcd at 10110 ¶ 64; 47 C.F.R. § 90.267(a).

<sup>9</sup> *Refarming R&O*, 10 FCC Rcd at 10111 ¶ 65. Low power licensees that elected to stay on their current channel could obtain primary status by raising output power, supplying station coordinates, and providing justification to raise output power. *Id.*

<sup>10</sup> *Id.*

<sup>11</sup> *See Freeze on the Filing of High Power Applications for 12.5 kHz Offset Channels in the 450-470 MHz Band, Public Notice*, DA 95-1771, 10 FCC Rcd 9995 (1995). Under the old rules, users of the low power offset channels were permitted 2 watts output power in all services except the Special Industrial Radio Service, where entities were eligible to be licensed at an effective radiated power of up to 100 watts.

<sup>12</sup> *Id.* The freeze also allowed the Commission to consider the potential for interference to medical telemetry devices, which ultimately led to the establishment of specific channels for such use. *See Amendment of Parts 2 and 95 of the Commission's Rules to Create a Wireless Medical Telemetry Service*, ET Docket 99-255, *Report and Order*, 15 FCC Rcd 11,206 (2000) (*Medical Telemetry R&O*).

<sup>13</sup> *Refarming Second R&O*, 12 FCC Rcd at 14,315-14,319 ¶¶ 15-21.

<sup>14</sup> *Id.* at 14,340-41 ¶ 63.

<sup>15</sup> *See Letter from Larry Miller, President, LMCC to Daniel Phythyon, Acting Chief, Wireless Telecommunications Bureau, FCC, dated June 4, 1997 (Consensus Plan).*

<sup>16</sup> *See Letter from Larry Miller, President, LMCC to Daniel Phythyon, Acting Chief, Wireless Telecommunications Bureau, FCC, dated August 21, 1997 (Low Power Plan).*

Low Power Plan until it resolved the issue of possible interference to medical telemetry devices using these frequencies.<sup>17</sup>

5. On June 8, 2000, the Commission adopted a *Report and Order* establishing the Wireless Medical Telemetry Service (WMTS) and allocating fourteen megahertz of spectrum in the 608-614 MHz, 1395-1400 MHz, and 1429-1432 MHz bands for medical telemetry use.<sup>18</sup> In making this allocation, the Commission's goal was to provide spectrum where medical telemetry equipment can operate without interference, but also to encourage medical telemetry users to eventually migrate out of the current bands, including the 450-470 MHz band.<sup>19</sup> Thereafter, on June 29, 2000, the Wireless Telecommunications Bureau (WTB) announced the acceptance of the LMCC's Low Power Plan.<sup>20</sup>

### III. DISCUSSION

#### A. Current Low Power Plan (450-470 MHz Band)

6. Section 90.267 of the Commission's Rules provides that any regularly assignable channel in the 450-470 MHz PLMR band may be designated by the frequency coordinators as a low power channel in a defined geographic area.<sup>21</sup> Low power stations authorized under this Section are limited to two (2) watts output power.<sup>22</sup> The Low Power Plan accepted by WTB designated 104 "12.5 kHz offset" channel pairs (hereinafter "channel pairs") for low power operation nationwide—ninety in the Industrial/Business Pool and fourteen in the Public Safety Pool.<sup>23</sup> Additionally, the LMCC designated the 6.25 kHz "drop in"

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<sup>17</sup> Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Services, PR Docket No. 92-235, *Second Memorandum Opinion and Order*, 14 FCC Rcd 8642, 8660 ¶ 37 (1999) (*Refarming Second MO&O*). See also Office Of Engineering And Technology Requests Information On Medical Telemetry Equipment Operating in the 450-460 MHz Band, *Public Notice*, 15 FCC Rcd 8324 (1999).

<sup>18</sup> *Medical Telemetry R&O*, 15 FCC Rcd 11,206 (2000). Based on the limited usage of the 450-460 MHz band for medical telemetry, the Commission found that the freeze on high-power land mobile applications in the 450-460 MHz band could be lifted and it stated that the Wireless Telecommunications Bureau would issue a public notice to lift the freeze in this band "in the near future." *Id.*, 15 FCC Rcd at 11,227 ¶ 63.

<sup>19</sup> *Medical Telemetry R&O*, 15 FCC Rcd 11,225 ¶ 57. The Commission noted that medical telemetry has no legal protection from interference in the current bands, including the 450-470 MHz band, because it is authorized on a secondary basis; however, "the fact remains that the Commission has had to take steps to protect medical telemetry from interference because it is used to protect safety of life." *Id.*

<sup>20</sup> See Wireless Telecommunications Bureau Accepts LMCC Low Power Plan for Part 90 450-470 MHz Band, *Public Notice*, 15 FCC Rcd 11,598 (2000) (*Low Power Public Notice*). In a companion public notice released the same day, WTB announced it was lifting the freeze. See Freeze on the Filing of High Power Applications for 12.5 kHz Offset Channels in the 450-460 MHz Band to be lifted January 29, 2001, *Public Notice*, 15 FCC Rcd 9996 (2000). The freeze on the 460-470 MHz segment of the band, however (where most medical telemetry operations are located), remains in effect until October 2003. *Medical Telemetry R&O*, 15 FCC Rcd 11,227-28 ¶ 65.

<sup>21</sup> See 47 C.F.R. § 90.267. The regularly assignable channels are listed in Subpart B (Public Safety Radio Pool) and Subpart C (Industrial/Business Radio Pool) of Part 90. *Id.* § 90.267(a).

<sup>22</sup> See 47 C.F.R. § 90.267(a)(3).

<sup>23</sup> Consensus Plan at 2.

channels directly adjacent to each designated 12.5 kHz channel.<sup>24</sup> We note that the licensing mechanism for all of these channels—which are PLMR frequencies below 470 MHz—was not affected by the Commission’s recent implementation of the Balanced Budget Act of 1997, which expanded the Commission’s obligation to award certain initial licenses by auction.<sup>25</sup>

#### B. LMCC Petition (Consensus Plan)

7. Because the Commission delegated to the frequency coordinators the identification of specific channels for low power use, the LMCC’s Petition<sup>26</sup> carries forward the portions of the LMCC’s Consensus Plan that were beyond the scope of the Commission’s delegation. Specifically, the LMCC contends that the wide variety of low power operations deployed in the PLMR community require rules that permit different types of operations on the low power channels. In this connection, it proposes that we divide the low power Industrial/Business Pool channels into groups with different technical and coordination requirements. It also requests changes to the Part 90 rules to allow certain operations to exceed two watts, including revisions to Section 90.267’s technical limitations that govern low power channels in the Public Safety Pool to allow designated channel pairs to be licensed for up to five watts.<sup>27</sup> These proposals—described in further detail below, and which require revisions to the Commission’s Rules—serve as the basis for this *Notice of Proposed Rule Making*.

8. In support of its proposal, the LMCC notes that industrial operations, manufacturing plants, and some businesses use the low power channels for in-plant and on-campus communications, including both voice and remote control of heavy machinery.<sup>28</sup> For these types of operations, according to the LMCC, site-specific coordination provides some degree of interference protection in a shared operating environment.<sup>29</sup> The LMCC further notes that a slightly higher power would be helpful in industrial and manufacturing complexes where there are often hostile radio environments.<sup>30</sup> On the other hand, the LMCC points out that low power equipment is also regularly employed in the construction industry,<sup>31</sup> wherein radio operations are often itinerant.<sup>32</sup> The LMCC notes that site-specific coordination provides

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<sup>24</sup> *Id.*

<sup>25</sup> Implementation of Sections 309(j) and 337 of the Communications Act of 1934, as Amended, *Report and Order and Further Notice of Proposed Rule Making*, FCC 00-403, ¶ 96 (rel. Nov. 20, 2000) (concluding that the public interest would best be served by retaining the current licensing scheme for the PLMR frequencies below 470 MHz).

<sup>26</sup> LMCC’s Petition incorporates and proposes the elements of the 1997 Consensus Plan that required rule revisions. Thus, we refer to the Consensus Plan and the Petition interchangeably.

<sup>27</sup> Petition at 8.

<sup>28</sup> *Id.* LMCC notes that these channels also support traffic control in highway construction corridors. *Id.*

<sup>29</sup> *Id.* at 5.

<sup>30</sup> *Id.* Industrial and manufacturing complexes are often faced with hostile radio environments due to the heavy electrical machinery and other significant generators of unintentionally radiated electromagnetic energy that are operated within typically enclosed environments.

<sup>31</sup> Petition at 7.

<sup>32</sup> Itinerant operation is defined as operation of a radio station at unspecified locations for varying periods of time. 47 C.F.R. § 90.7. LMCC notes that access to low power itinerant frequencies would especially benefit certain small business users, *e.g.*, electricians and plumbers, that need itinerant, on-site communications. Petition at 7.

little benefit to these users.<sup>33</sup> Accordingly, the LMCC recommends that the Part 90 rules governing low power operations in the 450-470 MHz band be changed to take into account the different types of industrial and business low power operations.<sup>34</sup> The Commission authorized the frequency coordinators to designate low power channels because it is assumed that coordinators have knowledge of specific user requirements and local conditions.<sup>35</sup> In this connection, we believe that adopting the rule revisions described herein would serve the public interest by addressing the diverse needs of various categories of PLMR users.

9. As an initial matter, we address the LMCC's recommended increases in the power limitation on certain frequencies.<sup>36</sup> Specifically, the LMCC states that certain frequencies should have an "effective radiated power (ERP) limitation higher than the 2-watt limitation ordinarily imposed by Section 90.267."<sup>37</sup> The LMCC also requests that, on certain frequencies, mobile units be allowed to operate with a maximum of 5 watts ERP and base stations be allowed to operate with a maximum of 20 watts ERP.<sup>38</sup> The LMCC further recommends maintaining the current 2-watt ERP limitation on the remaining frequencies.<sup>39</sup> We note, however, that Section 90.267 of the Commission's Rules limits maximum power in terms of transmitter output power (TPO) rather than ERP.<sup>40</sup> Because the LMCC states in its Petition that certain frequencies should be allowed a "higher power limitation than ordinarily imposed" by the Commission's Rules, we believe the LMCC's recommendation to retain the 2-watt limit for some channels and increase it to 5 watts on other channels was made relative to the existing rule.

10. *Mobiles.* Generally, ERP limits are preferable to TPO limits because ERP more accurately defines the actual operating power of the radio system by measuring the TPO plus antenna gain minus any loss factors. However, in this case, changing from a TPO standard to an ERP standard could actually "decrease" rather than "increase" the power limitation, contrary to the LMCC's overall recommendation. Moreover, existing operations would have to be converted or grandfathered and end users would have to procure an ERP calculation each time an antenna is replaced. In this connection, we note that the use of gain-adding antennas with mobile units is a practice that has been and continues to be allowed. By attaching a gain-adding antenna, a licensee could operate with a TPO of 2 watts but an ERP of greater than 5 watts. Specifically, existing licensees that use gain-adding antennas with their 2 watt TPO mobile units could be rendered non-compliant if we changed the rule to limit mobile units to 5 watts ERP. Therefore, we believe that instituting a 5 watt ERP limit for mobile units would be a more restrictive power limitation than the current 2 watt TPO limit. Thus, in this *Notice of Proposed Rule Making*, we restate the Petition's 2-watt and 5-watt recommendations in terms of TPO. We tentatively conclude that using TPO as a means of measurement for mobile units best serves the public interest. We seek comment on these tentative conclusions and our approach in analyzing the LMCC's suggested power limitations.

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<sup>33</sup> *Id.*

<sup>34</sup> *Id.* at 6.

<sup>35</sup> See, e.g., *Refarming Second R&O*, 12 FCC Rcd at 14341 ¶ 64.

<sup>36</sup> See Petition at 6.

<sup>37</sup> See, e.g., *id.* at 3.

<sup>38</sup> *Id.* at 6.

<sup>39</sup> *Id.* at 7. As discussed below, Section 90.267(a)(3) limits low power operations to two watts TPO.

<sup>40</sup> 47 C.F.R. § 90.267(a)(3).

11. *Fixed operations.* We believe that the Petition's recommended higher power limit of 20 watts ERP for base/fixed operations on certain channels does not introduce the same level of concern regarding conversion, grandfathering, and end user ERP calculations. Unlike the 2-watt and 5-watt limits for mobiles, defining the 20-watt limit for base stations in ERP does not defeat the LMCC's proposal to provide a slightly higher power option for operations that need to overcome "hostile radio environments" caused by heavy machinery, such as those in industrial and manufacturing complexes. Moreover, expressing a 20-watt power limit for base stations in TPO would be inappropriate for "low power channels" because significantly higher-gain antennas can be installed for base/fixed operations as compared to mobile/portable antennas (*e.g.*, 15 db gain antennas, which could produce an ERP of over 300 watts). Consequently, we are not restating, in TPO, the LMCC's proposed 20-watt ERP limitation for base/fixed operations on certain channels. We seek comment on this approach.

**1. Low Power Industrial/Business Pool (450-470 MHz Band)**

12. To address the diversity of low power operations, the LMCC recommends dividing the ninety Industrial/Business Pool low power channel pairs into four groups as detailed in the following table and discussed below.<sup>41</sup>

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<sup>41</sup> See, *e.g.*, Petition at 4-6.

**The LMCC Low Power Consensus Plan for the Industrial/Business Pool (450-470 MHz)**

LOW POWER CHANNELS	FREQUENCY COORDINATION	NOTES / LIMITATIONS
<p><b>Group A</b></p> <p><u>50 channel</u> pairs for “slightly higher” low power use</p>	<p>Yes</p>	<p><b><u>40 of 50 channels</u></b></p> <ul style="list-style-type: none"> <li>• <b>within 50 miles of top 100 urban areas</b> channels stay in low power plan but with higher limits                             <ul style="list-style-type: none"> <li>• base/fixed stations allowed up to 20 watts ERP and antenna height allowed up to 23 meters (75 feet) above ground level (AGL)</li> <li>• mobiles/portables allowed up to 5 watts TPO</li> </ul> </li> <li>• <b>outside of top 100 urban areas</b> <ul style="list-style-type: none"> <li>• channels available for full power operations, <i>i.e.</i>, generally a maximum of 500 watts ERP</li> <li>• up to a reference antenna height above average terrain (HAAT) of 125 meters</li> </ul> </li> </ul> <p><b><u>10 of 50 channels</u></b></p> <ul style="list-style-type: none"> <li>• <b>available nationwide</b> (not just top 100 urban areas)</li> <li>• channels stay in low power plan but with higher limits                             <ul style="list-style-type: none"> <li>• base/fixed stations allowed up to 20 watts ERP and antenna height allowed up to 23 meters (75 feet) AGL</li> <li>• mobiles/portables allowed up to 5 watts TPO</li> </ul> </li> </ul>
<p><b>Group B</b></p> <p><u>10 channel</u> pairs for low power non-voice use</p>	<p>Yes</p>	<p><b>Non-voice “data” channels</b></p> <ul style="list-style-type: none"> <li>• available nationwide (not just top 100 urban areas)</li> <li>• channels stay in low power plan and under existing 2-watt TPO limit but are                             <ul style="list-style-type: none"> <li>• designated for non-voice “data” operations</li> <li>• voice operations allowed only on a secondary, non-interference basis to non-voice operations</li> </ul> </li> </ul>
<p><b>Group C</b></p> <p><u>25 channel</u> pairs for low power itinerant use</p>	<p>No</p>	<p><b>Itinerant use channels</b></p> <ul style="list-style-type: none"> <li>• available nationwide (not just top 100 urban areas)</li> <li>• channels are designated for itinerant use, <i>i.e.</i>, operation at unspecified locations and varying times                             <ul style="list-style-type: none"> <li>• channels stay in low power plan and</li> <li>• under existing 2-watt TPO limit</li> </ul> </li> </ul>
<p><b>Group D</b></p> <p><u>5 channel</u> pairs for central station alarm use</p>	<p>Yes</p>	<p><b>Central station alarm channels as under current rules</b></p> <ul style="list-style-type: none"> <li>• three pairs available only for central station alarm (CSA) operations in urban areas defined under current rule                             <ul style="list-style-type: none"> <li>• available for all Industrial/Business Pool eligibles outside defined urban areas, as under current rules</li> </ul> </li> <li>• two pairs available only for central station alarm (CSA) operations nationwide, as under current rules</li> <li>• 2 watt TPO limit as under current rule</li> </ul>



13. *Group A.* Group A would consist of fifty channels for low power, coordinated use.<sup>42</sup> The maximum power for mobile/portable operation would be 5 watts TPO. The maximum power for base or fixed station operation would be 20 watts ERP with a maximum antenna height of 23 meters (m) (75 feet (ft)) above ground level.<sup>43</sup> Ten of the fifty channels would be available nationwide for low power operation within these parameters. The LMCC further proposes having forty of the fifty channels available for such low power operation in locations within 80 km (50 mi.) of the top 100 urban areas.<sup>44</sup> Outside of these 100 areas, the forty channels would be available for full power operation.<sup>45</sup> Consequently, if we amend Section 90.267 to allow up to 20 watts on forty channels within the top 100 urban areas and on the ten channels available nationwide, the LMCC will remove the forty channels from the low power Industrial/Business Pool in areas outside of the top 100 urban areas.<sup>46</sup> We seek comment on this proposal. We note that one of the frequencies proposed by the LMCC to be part of this Group A (457.5375 MHz) is currently reserved for cargo operations near docks.<sup>47</sup> Consequently, the use of this frequency would be secondary to dockside operations. However, 457.5375 MHz is also subject to 47 C.F.R. § 90.35(c)(11), which limits maximum power to 2 watts TPO, regardless of whether the frequency is designated for low power use under Section 90.267, and requires that stations be classified and licensed as mobile. The LMCC's proposal calls for 457.5375 MHz to be available for full power operations except in the top 100 urban areas, wherein it would be available for up to 20 watts with "site specific coordination and licensing."<sup>48</sup> We ask that commenters address whether 457.5375 MHz should, therefore, be exchanged for an alternate frequency.

14. Although the sole commenter to the LMCC Petition has expressed concern that allowing base stations to operate at 20 watts ERP would severely limit frequency re-use on these channels,<sup>49</sup> we believe that it is important to balance the benefits of re-use with the benefits of accommodating the diverse low power radio needs prevalent among PLMR users. Specifically, we note the LMCC's focus on the higher power level (up to 20 watts ERP) for industrial and manufacturing complexes. The Group A channels would remain frequency coordinated, which provides some assurance that these channels can be targeted for appropriate use in urban areas (wherein maximizing spectrum re-use is most essential due to spectrum congestion) at enclosed industrial and manufacturing complexes that attenuate the level of signals, generated inside the complex, that reach outside the complex.<sup>50</sup>

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<sup>42</sup> In addition to the fifty channel pairs specified, the same criteria apply to the channels 6.25 kHz immediately above and below these channels.

<sup>43</sup> Petition at 6.

<sup>44</sup> *Id.*

<sup>45</sup> *Id.* In the PLMR 450-470 MHz band, full power operation generally means a maximum of 500 watts ERP up to a reference antenna height above average terrain (HAAT) of 125 meters. See 47 C.F.R. § 90.205(g).

<sup>46</sup> As noted, the frequency coordinators are currently authorized under 47 C.F.R. § 90.267 to designate low power channels by geographic areas.

<sup>47</sup> See 47 C.F.R. § 90.35(c)(60).

<sup>48</sup> Petition at 6; see also LMCC Supplemental Comments at 3.

<sup>49</sup> Hexagram Partial Opposition at 2. Hexagram calls this proposal "unwise," as it will reduce the number of operators that can be licensed in a given geographical area. *Id.*

<sup>50</sup> See LMCC Supplemental Comments at 3.

15. Furthermore, we note that operations of up to 100 watts have been authorized in the past on the former Special Industrial Radio Service “offset” channels, and that agricultural operations comprised a significant number of the operations that benefited from this distinction.<sup>51</sup> In this connection, we ask commenters to address whether low power designations are useful outside of the top 100 urban areas, specifically, in rural areas—perhaps for agricultural operations that require private radio communications over large areas that cannot be covered effectively with two watts. Nonetheless, we also seek to balance the benefits of low power frequency reuse with the need for sufficient signal levels to cover a licensee’s operating area. Therefore, we seek comment on whether the forty channels should be available for full power operations or designated for an intermediate power category (such as 21-100 watts). Commenters on this issue should also discuss the relevance of automatic power control (APC), which is a communications system capability that allows the system to automatically adjust the output power of mobile and portable transmitters in order to maintain the minimum transmitting power necessary for effective communications.<sup>52</sup> By using as little power as necessary, APC also minimizes potential interference.

16. We also seek comment on how to define the top 100 urban areas for the 40 channel pairs for which the power limitation depends on their location with respect to an “urban area.” For example, in the past, the Commission has defined urban areas based on population statistics derived from U.S. Department of Commerce, Census Bureau data<sup>53</sup> as well as statistical areas defined by the U.S. Census Bureau.<sup>54</sup> Similarly, the Commission has relied on other U.S. Department of Commerce references in establishing the center coordinates for these areas.<sup>55</sup> We also note that variations on the “top urban areas” concept are proposed in other pending Commission proceedings.<sup>56</sup> We seek comment on the most appropriate definition for determining the top urban areas. Commenters are also welcome to suggest different cutoffs, such as the top 50 or top 20 urban areas, any suggestions should include a rationale that sets forth why the suggested cutoff is more appropriate than the top 100 cutoff mentioned above.

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<sup>51</sup> See 47 C.F.R. § 90.267 (1994).

<sup>52</sup> See Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, *Second Memorandum Opinion and Order*, WT Docket No. 96-86, 15 FCC Rcd. 16,844 ¶ 13 (2000).

<sup>53</sup> See, e.g., 47 C.F.R. §§ 90.261 (TPO limitations based on proximity to center of any urbanized area of 600,000 population), 90.35(c)(i)(63) (central station alarm use restricted to areas within boundaries of urbanized areas of 200,000 or more population), 90.635 (power and antenna height limitations based on proximity to 50 urbanized areas), 90.741 (licensees of Phase I nationwide 220-222 MHz systems must construct and operate in 28 of 100 listed urbanized areas). See also Amendment of Part 90 of the Commission’s Rules Concerning Bio-Medical Telemetry Operations, PR Docket No. 80-422, *Report and Order*, 85 FCC2d 745 ¶ 9 (1981).

<sup>54</sup> See, e.g., 47 C.F.R. § 52.23 (schedule for deployment of long-term database methods for number portability by local exchange carriers is defined, in part, by reference to 100 largest Metropolitan Statistical Areas (MSAs)).

<sup>55</sup> See U.S. Department of Commerce, *Airline Distance Between Cities in the United States*, Appendix, page 226; 47 C.F.R. § 90.261.

<sup>56</sup> See, e.g., The Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communication Requirements Through the Year 2010, WT Docket No. 96-86, *Fourth Report and Order and Fifth Notice of Proposed Rule Making*, FCC 01-10, ¶ 97 (rel. January 17, 2001) (noting “five-step, twenty-one year plan” proposal that would require Public Safety 700 MHz band General Use operations in Top fifty metropolitan areas to migrate to 6.25 kHz technology five-years earlier than proposed deadline for outside areas).

17. A related issue is whether low power mobile/portable operation extending outside the “fifty-mile circles” should be considered in a coordination analysis. For instance, if a low power base station (or geographic center of a mobile/portable-only operation) is located forty-seven miles from the center of one of the urban areas and the radius of operation is five miles, should coordinators take into account the area outside the “fifty-mile circle” when performing a coordination analysis for high power stations located outside the circle. We also ask that parties comment on how high power operations outside of a fifty-mile circle should protect low power users on the same or adjacent channel that are located within the fifty-mile protected area. Commenters should discuss what standard would be appropriate, *e.g.*, mileage separation, contour analysis, *etc.*

18. Finally, we note that our rules currently permit all of the channel pairs listed in Group A to be used for telemetry operations on a secondary basis, and that such operations are limited to 2 watts TPO.<sup>57</sup> Specifically, we seek comment on whether Group A should continue to be designated primarily for voice operations with non-voice operations authorized on a secondary basis or if non-voice operations should be limited to Group B described below.

19. *Group B.* Group B would consist of ten 12.5 kHz offset channel pairs for low power non-voice, coordinated use.<sup>58</sup> The maximum TPO for mobile/portable, base and fixed operation would be 2 watts, with a maximum antenna height above ground for base and fixed stations of 7 m (20 ft). The LMCC states that non-voice operations are needed here because these channels will be used for critical safety operations that could “suffer significant safety hazards if shared with voice operations.”<sup>59</sup> We tentatively conclude that adopting rule revisions to implement this proposal would serve the public interest. We seek comment on this tentative conclusion and the associated proposed rule changes. For example, we note that all of the Group B frequencies are currently governed by a Part 90 rule provision that designates telemetry operations as secondary.<sup>60</sup> We therefore tentatively conclude that this limitation should be removed for these frequencies. In addition, we seek comment as to whether we should allow continuous data transmissions on these channels or specify a duty cycle. Continuous data transmission occurs where an uninterrupted signal is sent by a transmitter, typically for remote applications that require positive control or monitoring. We note, however, that the continuous nature of these transmissions would limit the availability of these frequencies to be used by others.

20. The LMCC notes that in order to maximize spectrum efficiency, voice operations on the Group B data channels could be allowed on a secondary, non-interfering coordinated basis, *i.e.*, the ten channels could be designated as “data primary” instead of “data only.”<sup>61</sup> In this connection, we note that a petitioner in the *Refarming* proceeding referenced the LMCC’s “data primary” proposal and averred that shared use of voice and non-voice channels could have catastrophic results<sup>62</sup> and that interference

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<sup>57</sup> 47 C.F.R. § 90.35(c)(30).

<sup>58</sup> In addition to the ten 12.5 kHz channel pairs specified, the same criteria apply to the channels 6.25 kHz immediately above and below these channels.

<sup>59</sup> Petition at 7. LMCC notes that typical operations on these channels would include wireless data transmissions used for “remote control of cranes, robotics, *etc.*” *Id.*

<sup>60</sup> See 47 C.F.R. § 90.35(c)(30).

<sup>61</sup> *Id.*

<sup>62</sup> The example that the petitioner provided was a voice transmission causing a remote oil tank to be overfilled and rupturing. See Dataradio Petition for Reconsideration and/or Clarification of the *Second MO&O*, filed August 5, 1999 at 11-12.

avoidance would be costly and inefficient for users employing non-voice transmissions.<sup>63</sup> Accordingly, we seek comment on the advantages and disadvantages associated with designating the ten data channels as “data primary” versus “data only.” Specifically, we ask commenters to address whether the “data only” approach is necessary to adequately address the safety-related concerns identified in the LMCC’s proposal to designate ten channels for low power, data operations.

21. *Group C.* Group C would consist of twenty-five 12.5 kHz offset channel pairs for low power non-coordinated, itinerant use.<sup>64</sup> Itinerant operation is defined as operation of a radio station at unspecified locations for varying periods of time.<sup>65</sup> The LMCC suggests that these frequencies would be used by small businesses, such as electricians, plumbers, and others who need short-term, on-site communications.<sup>66</sup> Although we would still require users to obtain a license for this use, we would not require licensees to specify a location from which they would operate. Instead, licensees would be permitted to operate anywhere nationwide and prior coordination would not be required.<sup>67</sup> The maximum TPO for mobile/portable, base and fixed operation would be 2 watts, with a maximum antenna height above ground for base and fixed stations of 7 m (20 ft).

22. We note, however, that four of the frequencies (467.7625 MHz, 467.7875 MHz, 467.8125 MHz, and 467.8375 MHz) specified in the LMCC’s Petition are currently designated under our Part 90 rules for dockside operations on a primary basis.<sup>68</sup> These same frequencies are also authorized for mobile operation for radio remote control and telemetering functions and may be operated in the continuous carrier transmit mode.<sup>69</sup> We do not believe that sharing between these currently authorized uses and the proposed non-coordinated, itinerant operations is advisable due to the potential for harmful interference. Consequently, we seek comment as to what alternate channels might replace the four listed above.

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<sup>63</sup> *Id.* at 12. The Commission concluded that this issue went beyond the scope of the *Refarming* proceeding and that Dataradio’s concerns would be most appropriately raised and considered in the context of LMCC’s Petition. See Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Services, PR Docket No. 92-235, *Fifth Memorandum Opinion and Order*, FCC 00-439 ¶¶ 11-12 (rel. December 29, 2000) (*Fifth MO&O*).

<sup>64</sup> In addition to the twenty-five 12.5 kHz channel pairs specified, the same criteria apply to the channels 6.25 kHz immediately above and below these channels.

<sup>65</sup> 47 C.F.R. § 90.7.

<sup>66</sup> Petition at 7.

<sup>67</sup> These frequencies would be available for use nationwide, as the types of projects suited for low power, itinerant communications can take place in any state or region.

<sup>68</sup> 47 C.F.R. § 90.35(c)(60). We nonetheless note that there are a total of thirty-one frequencies available for dockside (cargo handling) operations on a primary basis and for low power use on a secondary basis. *Id.* We further note that dockside frequencies are subject to the outcome of the *Further Notice of Proposed Rule Making* in WT Docket No. 98-182, which sought comment on a proposal to eliminate the low power restriction on eight of the dockside frequencies and to designate the American Automobile Association as the sole coordinator of these eight channels. See 1998 Biennial Regulatory Review – 47 C.F.R. Part 90 - Private Land Mobile Radio Services, WT Docket No. 98-182, *Report and Order and Further Notice of Proposed Rule Making*, 15 FCC Rcd 16,673, 16,695-696 ¶¶ 49-50 (2000).

<sup>69</sup> *Id.* at § 90.35(c)(35).

23. We also note that ten of the low power channels that are proposed for Group C are currently available to hospitals and health care institutions for medical radio telemetry operations on a secondary basis.<sup>70</sup> While the Commission has lifted the freeze on the filing of high power applications for the 450-460 MHz part of the 450-470 MHz band, the freeze on the 460-470 MHz band (where most medical telemetry operations are located) remains in effect until October 2003.<sup>71</sup> The LMCC's proposal, however, would allow non-coordinated, itinerant operations on certain 460-470 MHz frequencies. We are concerned that despite the 2-watt limitation proposed for the Group C channels, medical telemetry, which is limited to 20 milliwatts, could experience harmful interference from these itinerant users. We therefore tentatively conclude that these ten frequencies should not be made available for non-coordinated, itinerant use as suggested by the LMCC, until the end of the medical telemetry transition period.

24. We also note that most of the Group C channel pairs are subject to note 30 that authorizes telemetry operations on a secondary basis to voice operations, as well as note 62 that authorizes fixed operations on a secondary basis to land mobile radio operations.<sup>72</sup> In other words, the secondary operations (telemetry and fixed) may be authorized as long as they do not cause harmful interference to primary operations (voice and mobile). However, secondary operations are difficult, if not impossible, to implement in an itinerant service because the primary operation may be performed at any location, at any time without prior coordination. Therefore, there is no way for entities proposing secondary operations (telemetry and fixed) to coordinate their activities around the primary operation. Consequently, while we tentatively conclude that these frequencies should be designated as non-coordinated, itinerant, we seek comment on whether data transmissions and fixed operation should be prohibited on these frequencies. If we were to prohibit either operation, we tentatively conclude that stations currently licensed on these frequencies should be permitted to remain on these frequencies on a secondary basis. We seek comment on this tentative conclusion.

25. The LMCC states that small business users in need of itinerant, on-site communications will utilize these channels, and that site-specific coordination would provide little benefit.<sup>73</sup> Moreover, we agree with the LMCC that more than 2 watts is usually unnecessary to overcome the radio environment at these typically unenclosed job sites.<sup>74</sup> In addition, we tentatively conclude, in agreement with the LMCC's suggestion, to require that manufacturers of the radios used for these channels construct the radios to work only on these twenty-five channels and other UHF color dot and star dot<sup>75</sup> frequencies in

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<sup>70</sup> 47 C.F.R. §§ 90.35(c)(67), 90.267(a)(5). These frequencies include: 462.7625 MHz, 462.7875 MHz, 462.8125 MHz, 462.8375 MHz, 462.8625 MHz, 462.8875 MHz, 462.9125 MHz, 467.8625 MHz, 467.8875 MHz, and 467.9125 MHz. Although such medical telemetry operations are authorized on a secondary basis, the Commission has previously recognized the importance of this vital service. See, e.g., *Medical Telemetry R&O*, 15 FCC Rcd 11,206 ¶ 1; see also note 19 and accompanying text, *supra*.

<sup>71</sup> *Id.* ¶ 65.

<sup>72</sup> See 47 C.F.R §§ 90.35(c)(30), (62).

<sup>73</sup> Petition at 7.

<sup>74</sup> *Id.* at 5.

<sup>75</sup> Certain low power and itinerant frequencies in the Industrial/Business Pool that are used for very low tier, low cost, entry level communications are commonly referred to as color dot frequencies because their operating frequencies are designated by a colored dot or star on the radio. This frequency identification code was developed by, and apparently is uniformly used by, the manufacturers of these radios. See, e.g., 1998 Biennial Regulatory Review – 47 C.F.R. Part 90 - Private Land Mobile Radio Services, *Notice of Proposed Rule Making*, WT Docket No. 98-182, 13 FCC Rcd 21,113 ¶ 31 n.55 (1998).

order to help protect full power coordinated channels from additional co-channel conflicts that might occur from uncoordinated users.<sup>76</sup> This restriction would be accomplished through our type certification process.<sup>77</sup> We seek comment on our tentative conclusion and the associated proposed rule changes.

26. We believe that adoption of this proposal will provide certain low power users, such as construction companies, needed flexibility in establishing short-term communications systems. In addition, we agree with the LMCC that the low power nature of itinerant operations mitigates, to a degree, concerns of interference to any current users on these frequencies.<sup>78</sup> Accordingly, we do not believe it is vital, as Hexagram requests, that we first establish that there are no users on these frequencies.<sup>79</sup> We seek comment, however, on how any incumbents on these twenty-five channels should be treated.

27. *Group D.* Group D would consist of five 12.5 kHz offset channel pairs for low power coordinated use.<sup>80</sup> The maximum TPO for mobile/portable, base and fixed operation would remain 2 watts, and the maximum antenna height above ground for base and fixed stations would remain 7 m (20 ft).<sup>81</sup> Currently, the subject frequencies are reserved for central station alarm (CSA) operations.<sup>82</sup> As with the other channel groups, we note that the Commission's Rules allow secondary telemetry operations on these frequencies.<sup>83</sup> The LMCC proposes no changes to these operating rules, and we tentatively conclude that this continued approach is warranted. Outside of the urban areas, however, the channels are available for Industrial/Business eligibles generally,<sup>84</sup> and the LMCC requests that these non-CSA users be permitted fixed as well as mobile operations.<sup>85</sup> We note that the Commission has eliminated the requirement that stations on designated low power channels in the 450-470 MHz band be licensed only as mobiles.<sup>86</sup> Consequently, we take this opportunity to clarify that low power operations may, but are not required to, supply their station coordinates and be licensed on a site-specific basis. We seek comment on our tentative conclusion and the associated rule changes.

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<sup>76</sup> Petition at 8.

<sup>77</sup> See 47 C.F.R. § 90.203.

<sup>78</sup> LMCC Supplemental Comments at 4.

<sup>79</sup> Partial Opposition at 3.

<sup>80</sup> In addition to the five 12.5 kHz channel pairs specified, the same criteria apply to the channels 6.25 kHz immediately above and below these channels.

<sup>81</sup> Petition at 7, n.5 (referring to 47 C.F.R. § 90.267(a)(7)(ii)).

<sup>82</sup> Three of these frequency pairs, 460/465.9126 MHz, 460/465.9375 MHz, and 460/465.9625 MHz are available for CSA operations only within the boundaries of urbanized areas of 200,000 or more population. 47 C.F.R. § 90.35(c)(63). Two of the frequency pairs, 460/465.9875 MHz and 460/465.0125 MHz, are available for CSA operations without regard to top urban areas. 47 C.F.R. §§ 90.35(c)(66). Secondary fixed CSA operations are allowed, with certain restrictions, on all five of these frequency pairs. 47 C.F.R. § 90.35(c)(64).

<sup>83</sup> See, e.g., discussion at para. 18, *supra*. We also note that 466.0125 MHz is available for hospital use on a secondary basis. 47 C.F.R. § 90.35(c)(69).

<sup>84</sup> 47 C.F.R. § 90.35(c)(63).

<sup>85</sup> Petition at 7, n.5.

<sup>86</sup> *Refarming Second MO&O*, 14 FCC Rcd at 8660 ¶ 36; *Fifth MO&O*, FCC 00-439 ¶ 13.

## 2. Low Power Public Safety Pool

28. The LMCC also recommends that we change certain rules governing use of the fourteen 12.5 kHz channel pairs designated for low power operations in the Public Safety Pool.<sup>87</sup> We believe there are public interest benefits in doing so. Therefore, we propose to allow a maximum power of 5 watts TPO for mobile/portable operation and a maximum antenna height for base and fixed stations of 7 m (20 ft), with site-specific and station class specific licensing, as suggested by the LMCC.<sup>88</sup> We take the LMCC's request for "station class" licensing to mean that low power Public Safety Pool users may obtain a license as either a mobile or as a fixed station. The latter station class designation, because the station's precise coordinates are required in the license application, would presumably provide a greater level of interference protection than a station licensed as mobile. We seek comment on the proposed rule changes and our described approach.

### C. Miscellaneous Matters

29. *Codification of Consensus Plan.* If we should adopt the proposals and tentative conclusions described herein, we would, in effect, codify the Consensus Plan in our Rules.<sup>89</sup> We also seek comment on whether, in keeping with the Commission's delegation of low power issues to the coordinators, we should instead establish a minimum, maximum, or absolute number of channels that the coordinators are authorized to designate for each group.

30. *Voice/Non-Voice Limitations.* In paragraphs 19-20 above, we tentatively conclude that we should adopt the Consensus Plan proposal to designate ten data channels, which the LMCC recommends largely on safety-related grounds. Apart from these safety-related concerns for separating voice and non-voice communications, the Commission has received informal complaints that data operations often are incompatible or disruptive to co-channel voice communications. In this connection, we request comments on whether to limit low power, non-voice communications to the ten channels in Group B, and whether channels designated for Groups A and/or C should be designated primarily for voice operations, with non-voice operations authorized on a secondary basis in either Group.<sup>90</sup>

31. *Channel Pairs.* The Consensus and Low Power Plans listed the low power channels in pairs. Under the current rules in the 450-470 MHz band, both base and mobile operation is permitted on the low side of a pair, while the high side is limited to mobile operation.<sup>91</sup> Applicants typically apply for one side of a pair. For example, if only mobile operation is desired, a license is granted for one side of the channel pair, usually the high side. If base and mobile operation is desired, a license is granted for the low side. In either case, only one side of the pair is authorized. We request comments on whether we should continue this approach for the channels specified in the low power pools or a different approach. If a

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<sup>87</sup> Petition at 8.

<sup>88</sup> *Id.* In addition to the fourteen 12.5 kHz channel pairs specified, the same criteria apply to the channels 6.25 kHz immediately above and below these channels.

<sup>89</sup> A list of the specific channels that LMCC proposes to designate for each group is set forth in Appendix A. *See also* Consensus Plan at Appendix A.

<sup>90</sup> *See id.* at ¶¶ 11-12. We believe that similarly limiting channels to voice-only operations would be inapplicable for Group D because these channels are available for central station alarm operations. 47 C.F.R. §§ 90.35(c)(63), (64). *See also* note 82, *supra*.

<sup>91</sup> *See* 47 C.F.R. §§ 90.173(i), 90.20, and 90.35.

different approach is suggested, commenters are requested to address the advantages and disadvantages of such an alternative approach.

32. *Status of High Power Licensees that Coordinators Certified under Exception to Freeze.* In the *Refarming Second Report and Order*, the Commission stated that prior to the lifting of the licensing freeze in the 450-470 MHz band (which was to occur only after the establishment of a low power consensus plan), new high power systems would be granted partial relief by allowing them to be licensed on any former 12.5 kHz offset channel not specifically designated for low power use.<sup>92</sup> Such license applications, however, were required to be accompanied by a statement from a frequency coordinator attesting that operation of a new high powered system would not impact any currently operating co-channel low power system.<sup>93</sup> Based on a review of our licensing records, it appears that subsequent to adoption of the *Refarming Second R&O*, the Commission has licensed a number of high power systems on the 12.5 kHz offset channels. It also appears that some of the channels for which entities received a license for high power operations are channels designated in the Consensus Plan for low power operation.<sup>94</sup> We request comments on how we should treat entities licensed for high power operation on 12.5 kHz offset channels that are now specifically designated for low power operation. Possible options include grandfathering such operation either indefinitely or until the end of the license term, or allowing them to operate on a primary basis until a date certain. We also request comments on how we should treat other incumbents that may be impacted by adoption of the proposals outlined in this *Notice of Proposed Rule Making*.<sup>95</sup>

#### IV. CONCLUSION

33. We believe that revising our rules to allow low power stations to exceed two watts on coordinator-designated low power channels would serve the public interest, as would allowing itinerant operations to be licensed for two watts without frequency coordination. Moreover, we believe that adoption of the proposed rule changes promote effective spectrum utilization and spectrum efficiency.

#### V. PROCEDURAL MATTERS

##### A. *Ex Parte* Rules -- Permit-but-Disclose Proceeding

34. This is a permit-but-disclose notice and comment rulemaking proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, if they are disclosed as provided in the Commission's Rules. *See generally* 47 C.F.R. §§ 1.1200(a), 1.1203, and 1.1206.

##### B. Initial Regulatory Flexibility Analysis

35. As required by Section 603 of the Regulatory Flexibility Act, 5 U.S.C. § 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the expected impact on small entities of the proposals suggested in this document. The IRFA is set forth in Appendix B. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments filed in this *Notice of Proposed Rule Making* ("*Notice*"), but they must have

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<sup>92</sup> *Refarming Second R&O*, 12 FCC Rcd at 14,343 ¶ 67.

<sup>93</sup> *Id.*

<sup>94</sup> *See* Appendix A to *Low Power Public Notice*, note 20, *supra*.

<sup>95</sup> *See, e.g.*, paras. 24, 26, *supra*.



a separate and distinct heading designating them as responses to the IRFA. The Commission's Consumer Information Bureau, Reference Information Center, SHALL SEND a copy of this *Notice*, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with Section 603(a) of the Regulatory Flexibility Act, 5 U.S.C. § 603(a).

### C. Alternative Formats

36. Alternative formats (computer diskette, large print, audio cassette and Braille) are available from Brian Millin at (202) 418-7426, TTY (202) 418-7365, or at [bmillin@fcc.gov](mailto:bmillin@fcc.gov). This *Notice* can also be downloaded at <http://www.fcc.gov/dtf/>.

### D. Pleading Dates

37. Pursuant to Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments on or before [**30 days from date of publication in the Federal Register**] and reply comments on or before [**60 days from date of publication in the Federal Register**]. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS), <http://www.fcc.gov/e-file/ecfs.html>, or by filing paper copies. See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 Fed. Reg. 23,121 (1998).

38. Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to <[ecfs@fcc.gov](mailto:ecfs@fcc.gov)>, and should include the following words in the body of the message, "get form <your e-mail address>." A sample form and directions will be sent in reply.

39. Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appear in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rulemaking number. All filings must be sent to the Commission's Secretary, Magalie Roman Salas, Office of the Secretary, Federal Communications Commission, 445 Twelfth Street, S.W., TW-A325, Washington, D.C. 20554.

### E. Contact for Information

40. For further information, contact Guy Benson, Esquire, Policy and Rules Branch, Public Safety and Private Wireless Division, Wireless Telecommunications Bureau, (202) 418-2946, <[gbenson@fcc.gov](mailto:gbenson@fcc.gov)>.

## VI. ORDERING CLAUSES

41. Accordingly, IT IS ORDERED that, pursuant to Sections 1, 4(i), 302, 303(f) and (r), and 332 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 1, 154(i), 302, 303(f) and (r), 332, the Petition for Rule Making filed by the Land Mobile Communications Council on September 11, 2000, IS GRANTED to the extent indicated herein.

42. IT IS FURTHER ORDERED that, pursuant to Sections 1, 4(i), 302, 303(f) and (r), and 332 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 1, 154(i), 302, 303(f) and (r), 332, NOTICE

IS HEREBY GIVEN of the proposed regulatory changes described in this *Notice of Proposed Rule Making*, and that COMMENT IS SOUGHT on these proposals.

43. IT IS FURTHER ORDERED that the Commission's Consumer Information Bureau, Reference Information Center, SHALL SEND a copy of this *Notice of Proposed Rule Making*, WT Docket No. 98-182, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with Section 603(a) of the Regulatory Flexibility Act.<sup>96</sup>

FEDERAL COMMUNICATIONS COMMISSION

Magalie Roman Salas  
Secretary

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<sup>96</sup> Pub. L. No. 96-354, 94 Stat. 1165, 5 U.S.C. §§ 601-612 (1980).

## APPENDIX A

*The LMCC Low Power Consensus Plan*Ninety (90) **Industrial/Business Pool** Channel Pairs<sup>1</sup> Designated for Low Power Use**Group A**

451/456.1875	451/456.2375	451/456.2875	451/456.3125
451/456.3375	451/456.3625	451/456.3875	451/456.4125
451/456.4375	451/456.4625	451/456.4875	451/456.5125
451/456.5375	451/456.5625	451/456.5875	451/456.6125
451/456.6375	451/456.6625	451/456.6875	451/456.7125
451/456.7375	451/456.7625	452/457.0375	452/457.0625
452/457.0875	452/457.1125	452/457.1375	452/457.1625
452/457.1875	452/457.2875	452/457.3125	452/457.4125
452/457.4875	452/457.5125	452/457.5375	452/457.6375
452/457.6625	452/457.6875	452/457.7125	452/457.7625
452/457.7875	452/457.8125	452/457.8375	452/457.8625
452/457.8875	452/457.9875	462/467.1875	462/467.4625
462/467.4875	462/467.5125		

**Group B**

462/467.2125	462/467.2375	462.467.2625	462/467.2875
462/467.3125	462/467.3375	462/467.3625	462/467.3875
462/467.4125	462/467.4375		

**Group C**

461/466.0375	461/466.0625	461/466.0875	461/466.1125
461/466.1375	461/466.1625	461/466.1875	461/466.2125
461/466.2375	461/466.2625	461/466.2875	461/466.3125
461/466.3375	461/466.3625	462/467.7625*	462/467.7875*
462/467.8125*	462/467.8375*	462/467.8625	462/467.8875
462/467.9125	464/469.4875	464/469.5125	464/469.5375
464/469.5625			

**Group D**

460/465.9125	460/465.9375	460/465.9625	460/465.9875
461/466.0125			

<sup>1</sup> Where available, the channels 6.25 kHz directly above and below these channels are also designated for low power use.

\* We propose that these channel pairs not be available for Group C itinerant use and seek alternative proposals. See *supra* para. 22.

*The LMCC Low Power Consensus Plan*Fourteen (14) **Public Safety Pool** Channel Pairs<sup>2</sup> Designated for Low Power Use

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453/458.0375	453/458.0625	453/458.0875	453/458.1125
453/458.1375	453/458.8875	453/458.9125	453/458.9375
453/458.9625	453/458.9875	460/465.4875	460/465.5125
460/465.5375	460/465.5625		

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<sup>2</sup> Where available, the channels 6.25 kHz directly above and below these channels are also designated for low power use.

**APPENDIX B****Initial Regulatory Flexibility Analysis**

1. As required by the Regulatory Flexibility Act (RFA),<sup>1</sup> the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities by the policies and rules proposed in this *Notice of Proposed Rule Making (Notice)*. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on this *Notice* provided above in paragraph 37, *supra*. The Commission will send a copy of the *Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration. See 5 U.S.C. § 603(a). In addition, the *Notice* and IRFA (or summaries thereof) will be published in the Federal Register. See *id.*

**A. Need for, and Objectives of, the Proposed Rules:**

2. The Commission tasked the PLMR frequency coordinators to develop a plan for low power operations, through industry consensus, on what was formerly known as the 450-470 MHz low power offset channels. On June 4, 1997, the Land Mobile Communications Council (LMCC) filed this plan (Consensus Plan). Because the LMCC's Consensus Plan required changes to the Commission's Rules, on September 11, 2000, the LMCC submitted a petition for rule making in which it asks the Commission to adopt these rule changes. Therefore, the Commission proposes to amend Part 90 of its rules in order to effectuate the changes suggested in the Consensus Plan.

3. These rule changes are needed in order to facilitate the viability of important low power operations in the 450-470 MHz band. Previously, low power operators were licensed on channels that were 12.5 kHz removed from regularly assignable channels in this band ("12.5 kHz offset channels"). These offset channels, however, were reclassified by the Commission for high power operation. Because of the continuing need for low power channels, we believe that implementation of the rule changes proposed in this *Notice* is in the public interest.

**B. Legal Basis:**

4. Authority for the proposed rules included in this issuance of this *Notice* is contained in Sections 1, 4(i), 302, 303(f), and (r), and 332 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 1, 154(i), 302, 303(f) and (r), and 332.

**C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply:**

5. The RFA directs agencies to provide a description of, and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.<sup>2</sup> The RFA defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small business concern" under section 3 of the Small Business Act.<sup>3</sup> A small business concern is one

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<sup>1</sup> See 5 U.S.C. § 603. The RFA, see 5 U.S.C. § 601 *et. seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

<sup>2</sup> 5 U.S.C. § 603(b)(3).

<sup>3</sup> *Id.* § 601(3).

which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.<sup>4</sup> Nationwide, as of 1992, there were approximately 275,801 small organizations.<sup>5</sup> “Small governmental jurisdiction” generally means “governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000.”<sup>6</sup> As of 1992, there were approximately 85,006 such jurisdictions in the United States.<sup>7</sup> This number includes 38,978 counties, cities, and towns; of these, 37,566, or ninety-six percent, have populations of fewer than 50,000.<sup>8</sup> The Census Bureau estimates that this ratio is approximately accurate for all governmental entities. Thus, of the 85,006 governmental entities, we estimate that 81,600 (ninety-one percent) are small entities. Below, we further describe and estimate the number of small entity licensees and regulatees that may be affected by the proposed rules, if adopted.

6. *Public Safety radio services and Governmental entities.* As a general matter, Public Safety Radio Pool licensees include police, fire, local government, forestry conservation, highway maintenance, and emergency medical services.<sup>9</sup> The SBA rules contain a definition for small radiotelephone (wireless) companies, which encompasses business entities engaged in radiotelephone communications employing no more than 1,500 persons.<sup>10</sup> There are a total of approximately 127,540 licensees within these services. Governmental entities as well as private businesses comprise the licensees for these services. The RFA also includes small governmental entities as a part of the regulatory flexibility analysis.<sup>11</sup> “Small governmental jurisdiction” generally means “governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000.”<sup>12</sup> As of 1992, there were

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<sup>4</sup> *Id.* § 632.

<sup>5</sup> 1992 Economic Census, U.S. Bureau of the Census, Table 6 (special tabulation of data under contract to the Office of Advocacy of the Small Business Administration).

<sup>6</sup> 5 U.S.C. § 601(5).

<sup>7</sup> U.S. Dep’t of Commerce, Bureau of the Census, *1992 Census of Governments*.

<sup>8</sup> *Id.*

<sup>9</sup> See subparts A and B of Part 90 of the Commission’s Rules, 47 C.F.R. §§ 90.1-90.22. Police licensees include 26,608 licensees that serve state, county, and municipal enforcement through telephony (voice), telegraphy (code), and teletype and facsimile (printed material). Fire licensees include 22,677 licensees comprised of private volunteer or professional fire companies, as well as units under governmental control. Public Safety Radio Pool licensees also include 40,512 licensees that are state, county, or municipal entities that use radio for official purposes. There are also 7,325 forestry service licensees comprised of licensees from state departments of conservation and private forest organizations that set up communications networks among fire lookout towers and ground crews. The 9,480 state and local governments are highway maintenance licensees that provide emergency and routine communications to aid other public safety services to keep main roads safe for vehicular traffic. Emergency medical licensees (1,460) use these channels for emergency medical service communications related to the delivery of emergency medical treatment. Another 19,478 licensees include medical services, rescue organizations, veterinarians, handicapped persons, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities, and emergency repair of public communications facilities.

<sup>10</sup> See 13 C.F.R. § 121.201 (SIC Code 4812).

<sup>11</sup> See 5 U.S.C. § 601(5) (including cities, counties, towns, townships, villages, school districts, or special districts).

<sup>12</sup> 5 U.S.C. § 601(5).

approximately 85,006 such jurisdictions in the United States.<sup>13</sup> This number includes 38,978 counties, cities and towns; of these, 37,566, or 96 percent, have populations of fewer than 50,000.<sup>14</sup> The Census Bureau estimates that this ratio is approximately accurate for all governmental entities. Thus, of the 85,006 governmental entities, the Commission estimates that 81,600 (91 percent) are small entities.

7. *Estimates for PLMR Licensees.* Private land mobile radio systems serve an essential role in a vast range of industrial, business, land transportation, and public safety activities. These radios are used by companies of all sizes operating in all U.S. business categories. Because of the vast array of PLMR users, the Commission has not developed a definition of small entities specifically applicable to PLMR users, nor has the SBA developed any such definition. The SBA rules do, however, contain a definition for small radiotelephone (wireless) companies.<sup>15</sup> Included in this definition are business entities engaged in radiotelephone communications employing no more than 1,500 persons.<sup>16</sup> According to the Bureau of the Census, only twelve radiotelephone firms of a total of 1,178 such firms which operated during 1992 had 1,000 or more employees. For the purpose of determining whether a licensee is a small business as defined by the SBA, each licensee would need to be evaluated within its own business area. The Commission's fiscal year 1994 annual report indicates that, at the end of fiscal year 1994, there were 1,101,711 licensees operating 12,882,623 transmitters in the PLMR bands below 512 MHz.<sup>17</sup>

8. *Equipment Manufacturers.* We anticipate that radio equipment manufacturers will be affected by our decisions in this proceeding. According to the SBA's regulations, a radio and television broadcasting and communications equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.<sup>18</sup> Census Bureau data indicate that there are 858 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 778 of these firms have fewer than 750 employees and would therefore be classified as small entities.<sup>19</sup>

#### **D. Description of Projected Reporting, Recordkeeping and Other Compliance Requirements:**

9. Reporting, record keeping, and compliance requirements under these proposed rules are nominal. No new reporting, recordkeeping, or other compliance requirements would be imposed on applicants or licensees as a result of the actions proposed in this rule making proceeding.

#### **E. Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered:**

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<sup>13</sup> U.S. Dept. of Commerce, Bureau of the Census, "1992 Census of Governments."

<sup>14</sup> *Id.*

<sup>15</sup> See 13 C.F.R. § 121.201 (SIC Code 4812) (NAICS Code 51322).

<sup>16</sup> *Id.*

<sup>17</sup> See Federal Communications Commission, 60th Annual Report, Fiscal Year 1994 at 120-121.

<sup>18</sup> 13 C.F.R. § 121.201, Standard Industrial Code (SIC) 3663.

<sup>19</sup> U.S. Dept. of Commerce, *1992 Census of Transportation, Communications and Utilities* (issued May 1995), SIC 3663.

10. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives: (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule or any part thereof for small entities.

11. Regarding our proposal to increase the power limits and antenna height for low power users operating on the fifty channels in Group A, *see* paras. 0-18, *supra*, there should be no significant adverse impact on small entities. Although increasing the power and antenna height limits for low power users on these channels could decrease the number of operators possible in a given area, we believe that the need for higher power and antenna height on these channels outweighs the potential losses. An alternative to this proposal would be to maintain the current power restriction of 2 watts output power and 7 meters antenna height, or impose power limitations less than 20 watts for base stations and 5 watts for mobile/portable stations and less than 23 meters antenna height above ground level. These alternatives, however, would not address the need, especially in hostile communications areas, for more than 2 watts output power and antenna heights of 7 meters.

12. In addition, regarding our proposal to designate 25 channels for low power, itinerant use in Group C, *see* paras. 21-26, *supra*, incumbent licensees, some of which may be small entities, could face interference from itinerant users that will not be required to coordinate their operations through a certified frequency coordinator. Such potential interference, however, is balanced against the need for itinerant operations in the PLMR services. In this connection, we note that small businesses that require itinerant operations will be eligible for these channels and may benefit from our proposal. Although we seek comment as to how to treat incumbents generally in Group C, we specifically request that commenters discuss those incumbents that are considered to be small businesses.

13. Regarding our proposal to require manufacturers of radios that are capable of working on these Group C channels to construct the radios so that they only work on these 25 channels and other UHF color dot and star dot frequencies, *see* para. 25, *supra*, there should be no significant adverse impact on small entities. An alternative to this proposal would be to not require manufacturers to construct the radios so as to limit the frequencies that they are capable of working on. This alternative would not, however, help protect full power coordinated channels from additional co-channel conflicts that might occur from uncoordinated users.

14. Regarding our proposal to allow 5 watts ERP for the fourteen channels in the Public Safety Pool, *see* para. 27, *supra*, there should be no significant adverse impact on small entities. An alternative to this proposal would be to maintain the current limitation of 2 watts output power or to impose a power limitation of less than 5 watts ERP. Neither of these alternatives, however, would be sufficient to promote flexibility for Public Safety Pool licensees that require more than 2 watts output power for their operations.

15. Finally, we seek comment on how the changes proposed in the *Notice* will effect small entities.

**F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules:**

16. None.



## APPENDIX C

Part 90 of Chapter 1 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

**PART 90 - PRIVATE LAND MOBILE RADIO SERVICES**

1. The authority citation for Part 90 continues to read as follows:

**AUTHORITY: Sections 4(i), 11, 303(g), 303(r) and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), 332(c)(7).**

2. Section 90.20 is proposed to be amended by revising paragraph (c)(3) to read as follows:

[list of 28 frequencies (14 pairs) in the 450-470 MHz band and, where available, the frequencies 6.25 kHz directly above and below each 12.5 kHz frequency, to add a new limitation/note that cross-references to Section 90.267.]

3. Section 90.35 is proposed to be amended by revising paragraph (b)(3) to read as follows:

[list of 180 frequencies (90 pairs) in the 450-470 MHz band and, where available, the frequencies 6.25 kHz directly above and below each 12.5 kHz frequency, to add a new limitation/note that cross-references to Section 90.267.]

4. Section 90.35 is proposed to be amended by revising paragraph (b)(67) to read as follows:

Use of this frequency is on a secondary basis and subject to the provisions of §90.267(a)(4), (a)(7), (a)(8) and (a)(9).

5. Section 90.203 is proposed to be amended by adding paragraph (m) to read as follows:

**§ 90.203 Certification required.**

\* \* \* \* \*

(m) Transmitters for use on low power itinerant channels must be certificated, in accordance with the provisions of Part 2 of the Commission's Rules, and designed so that their operation is limited to the frequencies listed in § 90.267(a)(4) and/or frequencies 464.500 MHz, 464.550 MHz, 467.850 MHz, 467.875 MHz, 467.900 MHz, and 467.925 MHz.

6. Section 90.267 is proposed to be amended by revising paragraph (a) to read as follows:

**§ 90.267 Assignment and use of frequencies in the 450-470 MHz band for low power use.**

(a) The following frequencies between 450-470 MHz are designated for low-power use subject to the provisions of this section. Pairs are shown but single frequencies are available for simplex operations.

(1) *Group A1 Frequencies.* The Industrial/Business Pool frequencies listed in Group A1 are available on a coordinated basis, pursuant to §90.35(b)(2) and § 90.175(b), as follows:

(i) Within 80 kilometers of the top ### urban areas, operation on these frequencies is limited to 5 watts output power for mobile stations and 20 watts effective radiated power for fixed stations. A maximum antenna height of 23 meters (75 feet) above ground is authorized for fixed stations.

(ii) Outside 80 kilometers of the top ### urban areas, operation on these frequencies is

available for full power operation pursuant to the power and antenna height limits listed in § 90.205 of this chapter.

Industrial/Business Pool Group A1 Low Power Frequencies

451/456.18125	451/456.58125	452/457.10625	452/457.70625
451/456.1875	451/456.5875	452/457.1125	452/457.7125
451/456.19375	451/456.59375	452/457.11875	452/457.71875
451/456.28125	451/456.60625	452/457.13125	452/457.78125
451/456.2875	451/456.6125	452/457.1375	452/457.7875
451/456.29375	451/456.61875	452/457.14375	452/457.79375
451/456.30625	451/456.65625	452/457.15625	452/457.80625
451/456.3125	451/456.6625	452/457.1625	452/457.8125
451/456.31875	451/456.66875	452/457.16875	452/457.81875
451/456.35625	451/456.68125	452/457.18125	452/457.83125
451/456.3625	451/456.6875	452/457.1875	452/457.8375
451/456.36875	451/456.69375	452/457.19375	452/457.84375
451/456.38125	451/456.70625	452/457.28125	452/457.88125
451/456.3875	451/456.7125	452/457.2875	452/457.8875
451/456.39375	451/456.71875	452/457.29375	452/457.89375
451/456.40625	451/456.73125	452/457.48125	452/457.98125
451/456.4125	451/456.7375	452/457.4875	452/457.9875
451/456.41875	451/456.74375	452/457.49375	452/457.99375
451/456.45625	451/456.75625	452/457.53125	462/467.18125
451/456.4625	451/456.7625	452/457.5375	462/467.1875
451/456.46875	451/456.76875	452/457.54375	462/467.19375
451/456.48125	452/457.03125	452/457.63125	462/467.45625
451/456.4875	452/457.0375	452/457.6375	462/467.4625
451/456.49375	452/457.04375	452/457.64375	462/467.46875
451/456.50625	452/457.05625	452/457.65625	462/467.48125
451/456.5125	452/457.0625	452/457.6625	462/467.4875
451/456.51875	452/457.06875	452/457.66875	462/467.49375
451/456.55625	452/457.08125	452/457.68125	462/467.50625
451/456.5625	452/457.0875	452/457.6875	462/467.5125
451/456.56875	452/457.09375	452/457.69375	462/467.51875

(2) *Group A2 Frequencies.* The Industrial/Business Pool frequencies listed in Group A2 are available nationwide on a coordinated basis, pursuant § 90.35(b)(2) and §90.175(b). Operation on these frequencies is limited to 5 watts output power for mobile stations and 20 watts effective radiated power for fixed stations. A maximum antenna height of 23 meters (75 feet) above ground is authorized for fixed stations.

## Industrial/Business Pool Group A2 Low Power Frequencies

451/456.23125	451/456.53125	452/457.40625	452/457.85625
451/456.2375	451/456.5375	452/457.4125	452/457.8625
451/456.24375	451/456.54375	452/457.41875	452/457.86875
451/456.33125	451/456.63125	452/457.50625	
451/456.3375	451/456.6375	452/457.5125	
451/456.34375	451/456.64375	452/457.51875	
451/456.43125	452/457.30625	452/457.75625	
451/456.4375	452/457.3125	452/457.7625	
451/456.44375	452/457.31875	452/457.76875	

(3) *Group B Frequencies.* The Industrial/Business Pool frequencies listed in Group B are available nationwide on a coordinated basis, pursuant to § 90.35(b)(2) and §90.175(b), for data operations. Operation on these frequencies is limited to 2 watts output power for mobile or fixed stations. A maximum antenna height of 23 meters (75 feet) above ground is authorized for fixed stations.

## Industrial/Business Pool Group B Low Power Frequencies

462/467.20625	462/467.28125	462/467.35625	462/467.43125
462/467.2125	462/467.2875	462/467.3625	462/467.4375
462/467.21875	462/467.29375	462/467.36875	462/467.44375
462/467.23152	462/467.30625	462/467.38125	
462/467.2375	462/467.3125	462/467.3875	
462/467.24375	462/467.31875	462/467.39375	
462/467.25625	462/467.33125	462/467.40625	
462/467.2625	462/467.3375	462/467.4125	
462/467.26875	462/467.34375	462/467.41875	

(4) *Group C Frequencies.* The Industrial/Business Pool frequencies listed in Group C are available nationwide for non-coordinated itinerant use. Operation on these frequencies is limited to 2 watts output power for mobile or fixed stations. A maximum antenna height of 7 meters (20 feet) above ground is authorized for fixed stations. The frequencies in Group C that are subject to the provisions of §90.35(b)(67) will not be available for itinerant use until October 17, 2003.

Industrial/Business Pool Group C Low Power Frequencies

461/466.03125	461/466.15625	461/466.28125	461/466.****
461/466.0375	461/466.1625	461/466.2875	462/467.8625
461/466.04375	461/466.16875	461/466.29375	462/467.8875
461/466.05625	461/466.18125	461/466.30625	462/467.9125
461/466.0625	461/466.1875	461/466.3125	464/469.48125
461/466.06875	461/466.19375	461/466.31875	464/469.4875
461/466.08125	461/466.20625	461/466.33125	464/469.5125
461/466.0875	461/466.2125	461/466.3375	464/469.51875
461/466.09375	461/466.21875	461/466.34375	464/469.53125
461/466.10625.	461/466.23125	461/466.35625	464/469.5375
461/466.1125	461/466.2375	461/466.3625	464/469.5625
461/466.11875	461/466.24375	461/466.36875	464/469.56875
461/466.13125	461/466.25625	461/466.****	
461/466.1375	461/466.2625	461/466.****	
461/466.14375	461/466.26875	461/466.****	

(5) *Group D Frequencies.* The Industrial/Business Pool frequencies listed in Group D are available for central station alarm operations in urban areas as defined in § 90.35(c)(63) and (64) of this chapter. Central alarm stations may utilize antennas mounted not more than 7 meters (20 feet) above a man-made supporting structure. Outside the urban areas described in § 90.35(c)(63), Group D frequencies are available for general industrial/business use on a coordinated basis, pursuant to § 90.35(b)(2) and §90.175(b). Non-central station alarm operation on these frequencies is limited to 2 watts output power for mobile or fixed stations. Non-central station alarm stations are limited to a maximum antenna height of 7 meters (20 feet) above ground.

Industrial/Business Pool Group D Low Power Frequencies

460/465.90625	460/465.95625	461/466.00625
460/465.9125	460/465.9625	461/466.0125
460/466.91875	460/465.96875	461/466.01875
460/465.93125	460/465.98125	
460/465.9375	460/465.9875	
460/465.94375	460/465.99375	

(6) *Low Power Public Safety Frequencies.* The frequencies listed in the Public Safety Pool Low Power Group are available nationwide on a coordinated basis, pursuant to § 90.20(c)(2) and § 90.175(b). Operation on these frequencies is limited to 5 watts output power for mobile or fixed stations. A maximum antenna height of 7 meters (20 feet) above ground is authorized for fixed stations.

Public Safety Pool Low Power Frequencies

453/458.03125	453/458.13125	453/458.95625	460/465.53125
453/458.0375	453/458.1375	453/458.9625	460/465.5375
453/458.04375	453/458.14375	453/458.96875	460/465.54375
453/458.05625	453/458.88125	453/458.98125	460/465.55625
453/458.0625	453/458.8875	453/458.9875	460/465.5625
453/458.06875	453/458.89375	453/458.99375	460/465.56875
453/458.08125	453/458.90625	460/465.48125	
453/458.0875	453/458.9125	460/465.4875	
453/458.09375	453/458.91875	460/465.49375	
453/458.10625	453/458.93125	460/465.50625	
453/458.1125	453/458.9375	460/465.5125	
453/458.11875	453/458.94375	460/465.51875	

(7) Wide area operations will not be authorized. The area of normal day-to-day operations will be described in the application in terms of maximum distance from a geographic center (latitude and longitude).

(8) A hospital or health care institution holding a license to operate a radio station under this part may operate a medical radio telemetry device with an output power not to exceed 20 milliwatts without specific authorization from the Commission. All licensees operating under this authority must comply with the requirements and limitations set forth in this section.

(9) Antennas of mobile stations used as fixed stations communicating with one or more associated stations located within 45 degrees of azimuth shall be directional and have a front to back ratio of at least 15 dB.

(i) No limit shall be placed on the length or height above ground level of any commercially manufactured radiating transmission line when the transmission line is terminated in a non-radiating load and is routed at least 7 meters (20 feet) interior to the edge of any structure or is routed below ground level.

(ii) Sea-based stations may utilize antennas mounted not more than 7 meters (20 feet) above a man-made supporting structure, including antenna structures.

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