

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

In the Matter of Application of	)	
	)	
CITY OF CHICAGO	)	File No. 0002136559
	)	
To Modify a Public Safety Radio	)	
Communications System in Frequency Band	)	
470-482 MHz in Chicago, Illinois	)	

**ORDER**

**Adopted: August 2, 2006**

**Released: August 3, 2006**

By the Chief, Public Safety and Critical Infrastructure Division, Wireless Telecommunications Bureau:

**I. INTRODUCTION**

1. We have before us an application and associated waiver requests<sup>1</sup> filed by the City of Chicago, Illinois (Chicago) to modify the license for trunked Public Safety Pool Station WPSG985, Chicago, Illinois, by adding twenty UHF frequency pairs.<sup>2</sup> Chicago seeks a waiver, pursuant to Section 1.925 of the Commission's Rules,<sup>3</sup> or, in the alternative, Section 337(c) of the Communications Act of 1934, as amended (the Act),<sup>4</sup> of the Commission's Rules to enable it to use currently unassigned frequencies allotted for non-public safety use (Paging Request), and to use Private Land Mobile Radio (PLMR) UHF frequencies shared with television (TV) stations with less than the required separation from co-channel and adjacent channel TV stations (Part 90 Request). For the reasons stated herein, we grant Chicago's waiver requests.

**II. BACKGROUND**

2. Chicago has a permanent resident population of three million people, with a transient population of commuters, tourists, and business travelers increasing the total to over four million daily.<sup>5</sup>

<sup>1</sup> See FCC File No. 0002136559 (filed April 25, 2005, amended April 27, 2005, August 2, 2005, and August 17, 2005). Attached to application are (1) Waiver Request of Sections 90.307(d) and 90.309 (Part 90 Request); (2) Waiver Request of Sections 22.621 and 22.501 (Paging Request); (3) Letter from William Carter, Supervisor, Electronics Operations, Chicago Office of Emergency Management and Communications to Federal Communications Commission (dated Feb. 6, 2005) (Section 337 Request); and (4) Request for Extended Implementation. The request for extended implementation will be addressed separately.

<sup>2</sup> Frequencies in the 300 MHz to 3 GHz range are Ultra High Frequencies (UHF), but land mobile frequencies in the 450-512 MHz range are sometimes known as the land mobile "UHF band." In this *Order*, references to UHF mean 450-512 MHz. See, e.g., Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended, *Notice of Proposed Rule Making*, WT Docket No. 99-87, 14 FCC Rcd 5206, 5215 ¶¶ 11-12 (1999).

<sup>3</sup> 47 C.F.R. § 1.925.

<sup>4</sup> 47 U.S.C. § 337(c).

<sup>5</sup> Part 90 Request at 2; Paging Request at 2.

Chicago is responsible for providing both public safety and non-emergency services over a 300-square mile area.<sup>6</sup> Due to what Chicago characterizes as “unmanageable congestion” on its current radio system’s sixteen UHF frequency pairs,<sup>7</sup> Chicago is seeking to implement a multi-year plan to add capacity to its wireless communications network.<sup>8</sup> Population growth and the additional demands placed on Chicago’s emergency services by post-9/11 security concerns have further prompted Chicago to seek additional spectrum.<sup>9</sup> Chicago has determined that it requires at least twenty additional frequency pairs to fulfill its needs.<sup>10</sup>

3. Chicago has identified twenty available frequency pairs in the 470-512 MHz band, which is allocated on a geographically-shared basis with TV broadcast stations.<sup>11</sup> It states that it performed an exhaustive frequency search and monitored every proposed channel to determine its suitability.<sup>12</sup> Chicago contends that use of the requested channels is necessary due to the insufficient availability of channels in the frequency bands designated for public safety use.<sup>13</sup> Thirteen of the requested frequency pairs are designated for point-to-multipoint transmitters used to support transmitters that provide public mobile service, *i.e.*, paging control.<sup>14</sup> Because the requested paging frequencies are not designated for public safety use, Chicago requires a waiver of Sections 20.9(a)(6), 22.501, 22.621, 90.303, and 90.311 of the Commission’s Rules.<sup>15</sup> The remaining seven frequency pairs are designated for Part 90 PLMR use in the Chicago area. Because of short-spacing to co-channel and adjacent channel TV stations, Chicago’s proposed use requires a waiver of Sections 22.627(b), 90.303, 90.307, and 90.309 of the Commission’s

---

<sup>6</sup> Part 90 Request at 3; Paging Request at 3.

<sup>7</sup> See Part 90 Request at 2; Paging Request at 2.

<sup>8</sup> Waiver Request at 1.

<sup>9</sup> Part 90 Request at 2; Paging Request at 2.

<sup>10</sup> Waiver Request at 1.

<sup>11</sup> Frequencies in the 470-512 MHz band, normally assigned to UHF Television channels 14 through 20, were made available for land mobile radio use in eleven cities in the early 1970s in the “UHF-TV Sharing” proceeding. See Land Mobile Use of TV Channels 14 through 20, *Report and Order*, Docket No. 18261, 23 FCC 2d 325 (1970).

<sup>12</sup> See Part 90 Request at 4; Paging Request at 4.

<sup>13</sup> See Part 90 Request at 4; Paging Request at 4.

<sup>14</sup> See 47 C.F.R. § 22.621.

<sup>15</sup> 47 C.F.R. §§ 20.9(a)(6), 22.501, 22.621, 22.651, 90.303, 90.311. Section 20.9(a)(6) specifies that Part 22 operations shall be treated as common carrier services and regulated as commercial mobile radio services. Section 22.501 defines the scope of the licensing and operation of the Public Paging and Radiotelephone Service. Sections 22.621 and 22.651 set forth frequencies, some of which are in the 470-512 MHz band, that are available for point-to-multipoint systems. Section 90.303 sets forth certain TV channels available for land mobile and paging assignment in thirteen urbanized areas of the United States. Frequencies in the TV Channel 14 and 15 bands (470-482 MHz) are designated as such in the Chicago area. Section 90.311 provides the specific frequency ranges available for assignment to land mobile users.

Rules.<sup>16</sup> Chicago seeks such waivers pursuant to Section 1.925 of the Commission's Rules,<sup>17</sup> or, in the alternative, Section 337(c) of the Act.<sup>18</sup>

4. On December 8, 2005, the Wireless Telecommunications Bureau placed Chicago's application and waiver requests on public notice.<sup>19</sup> We received no comments or reply comments.

### III. DISCUSSION

5. **Paging Request.** Section 337(c) of the Act provides that the Commission must waive any rules necessary to authorize entities providing public safety services to operate on unassigned non-public safety spectrum, if the Commission makes five specific findings:

- public safety spectrum is not immediately available;
- the proposed use will not cause harmful interference to protected spectrum users;
- public safety use of the unassigned frequencies is consistent with public safety spectrum allocations in the geographic area;
- the unassigned frequencies have been allocated for non-public safety use for more than two years; and
- grant of the application is consistent with the public interest.<sup>20</sup>

6. Public safety services are services the principal purpose of which is to protect the safety of life, health, or property, provided by governmental entities whose primary mission is the provision of such services, or by non-governmental entities authorized by such a governmental entity, and that are not made commercially available to the public.<sup>21</sup> Based on the record before us, we find that Chicago is an entity providing public safety services.<sup>22</sup>

7. *No other spectrum allocated to public safety services is immediately available to satisfy the requested public safety service use.* Chicago contends that no public safety spectrum is immediately

---

<sup>16</sup> See 47 C.F.R. §§ 22.627(b), 90.303, 90.307, 90.309. Section 22.627(b) sets effective radiated power (ERP) limits for paging control transmitters. (Chicago did not specifically request a waiver of Section 22.627(b), but such a waiver is required because Chicago's proposed ERP exceeds the Part 22 limit.) Section 90.303, Table, note 1 provides that TV Channel 15 frequencies in the Chicago area may be used for paging operations in addition to low power base/mobile usages, where applicable protection requirements for UHF TV stations are met. Sections 90.307 and 90.309 set forth protection criteria of TV stations in the 470-512 MHz band.

<sup>17</sup> 47 C.F.R. § 1.925.

<sup>18</sup> See 47 U.S.C. § 337(c).

<sup>19</sup> See Wireless Telecommunications Bureau Seeks Comment on Request for Waiver by the City of Chicago, Illinois to Utilize Paging Control Frequencies and Request for Waiver of TV Protection Criteria, *Public Notice*, 20 FCC Rcd 19352 (WTB PSCID 2005).

<sup>20</sup> See 47 U.S.C. § 337(c).

<sup>21</sup> See 47 U.S.C. § 337(f).

<sup>22</sup> See Nassau County Police Department, *Memorandum Opinion and Order*, 17 FCC Rcd 14252, 14258 ¶ 11 (2002).

available to support its proposed modification.<sup>23</sup> In support of its contention, Chicago submitted the results of a frequency search of the following bands containing land mobile public safety spectrum: 150-160 MHz, 450-470 MHz, 470-512 MHz, and 851-869 MHz.<sup>24</sup> Based on the record before us, we concur with Chicago, and find that no other public safety spectrum is immediately available to satisfy the requested public safety service use.<sup>25</sup>

8. *The requested use is technically feasible without causing harmful interference to other spectrum users entitled to protection from such interference under the Commission's regulations.* Chicago has determined that all of the paging channels being requested are unassigned in the Chicago metropolitan area.<sup>26</sup> Moreover, we note that the potential for interference to adjacent channel users is further diminished because Chicago proposes to use 12.5 kHz bandwidth equipment on frequencies where 20 kHz bandwidth is permitted.<sup>27</sup> We, therefore, conclude that Chicago's proposed addition of paging control frequencies is technically feasible and will not cause harmful interference to protected spectrum users.

9. *The use of the unassigned frequency for the provision of public safety services is consistent with other allocations for the provision of such services in the geographic area for which the application is made.* The frequencies that Chicago proposes to add to its public safety communications system are within a frequency band where public safety land mobile radio operations are authorized. Further, the 470-482 MHz band is being used by Chicago and other public safety agencies in the Chicago metropolitan area.<sup>28</sup> We therefore conclude that use of the unassigned frequency pairs for the provision of the proposed public safety services is consistent with other allocations for the provision of such services in the geographic area and will promote interoperability.

10. *The unassigned frequencies were allocated for their present use not less than two years prior to the date on which the application will be granted.* The Commission allocated these frequencies for non-public safety use in 1994.<sup>29</sup> Thus, these frequencies have been allocated for their present use for more than two years.

11. *Granting the application is consistent with the public interest.* We believe that Chicago's filings demonstrate that access to additional spectrum is needed in order to promote effective public safety communications. As described by Chicago, granting the applications and waiver request would be

---

<sup>23</sup> See Section 337 Request at 1; see also letter dated Apr. 13, 2005 from William J. Carter, Northern Illinois APCO Frequency Advisor, to Wireless Telecommunications Bureau, Federal Communications Commission.

<sup>24</sup> Paging Request, Exhibit 1. The frequency search was prepared by Chicago and the Association of Public-Safety Communications Officials International, Inc. (APCO), an FCC-certified public safety frequency coordinator.

<sup>25</sup> See 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*, WT Docket No. 99-87, 15 FCC Rcd 22709, 22769 ¶ 132 (2000) (the statutory requirement is satisfied if there is "no unassigned public safety spectrum, or not enough for the proposed public safety use, in any band in the geographic area in which the Section 337 applicant seeks to provide public safety services").

<sup>26</sup> See Paging Request at 6.

<sup>27</sup> See 47 C.F.R. § 22.621.

<sup>28</sup> See Paging Request, Exhibit 1.

<sup>29</sup> See Revision of Part 22 of the Commission's Rules Governing the Public Mobile Services, *Report and Order*, CC Docket 92-115, 9 FCC Rcd 6513 (1994).

in the public interest as it will provide additional capacity to the existing public safety radio system and facilitate interoperability among Chicago's public safety departments.<sup>30</sup> We believe that it would further the public interest by affording Chicago's public safety community the necessary spectrum to allow it to safely protect the lives and property in its care. Indeed, Section 1 of the Act defines one of the Commission's over-arching purposes as "promoting safety of life and property through the use of ... radio communication."<sup>31</sup> We therefore find it in the public interest to permit Chicago to use this otherwise vacant spectrum to support critical communications that will promote public safety and homeland security.

**12. Part 90 Request.** We now consider Chicago's request for waiver of the Part 90 TV interference protection rules.<sup>32</sup> Pursuant to Section 1.925 of the Commission's Rules, a request for a rule waiver may be granted if it is shown that (a) the underlying purpose of the rule would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest; or (b) in view of unique or unusual factual circumstances of the instant case, application of the rule would be inequitable, unduly burdensome, or contrary to the public interest, or the applicant has no reasonable alternative.<sup>33</sup>

13. The underlying purpose of Sections 90.303, 90.307, and 90.309 is to ensure that TV stations and PLMR stations do not interfere with one another.<sup>34</sup> Chicago seeks a waiver in order to operate on seven PLMR frequency pairs in the TV Channel 15 band (476-482 MHz) without meeting the minimum separation requirements with respect to co-channel and adjacent channel TV stations.<sup>35</sup> In 1991, the Commission released a public notice that requires applicants for frequencies in the 470-512 MHz band that are short-spaced to TV stations to request a waiver and demonstrate that the proposed operations would satisfy the intended protection criteria.<sup>36</sup> Chicago provided a contour analysis to show that the affected TV stations would receive the required interference protection.<sup>37</sup> In addition, Chicago served its application and waiver request on the affected TV stations,<sup>38</sup> as required in the *1991 Public Notice*. We

---

<sup>30</sup> See Part 90 Request at 2; Paging Request at 2. Chicago's public safety departments include a 14,000-member police force and a 6,000-member fire/EMS force.

<sup>31</sup> 47 U.S.C. § 151.

<sup>32</sup> The request for seven PLMR frequency pairs in the UHF TV band cannot be examined under Section 337(c) of the Act because the frequencies do not qualify as non-public safety spectrum.

<sup>33</sup> 47 C.F.R. § 1.925(b)(3).

<sup>34</sup> See Further Sharing of the UHF Television Band by Private Land Mobile Radio Services, *Notice of Proposed Rulemaking*, Gen. Docket No. 85-172, 101 F.C.C. 2d 852 (1985).

<sup>35</sup> Specifically, based on Chicago's proposed antenna height above average terrain of 164 meters and 150 watts ERP, Figure A of Section 90.309 would require a separation of 209 kilometers (km) to co-channel TV stations, but Chicago's proposed base station is short-spaced to Channel 15 Stations WMTV, Madison, Wisconsin (199 km) and WICD, Champaign, Illinois (203 km). In addition, the proposed base station is short-spaced to adjacent channel TV Channel 16 Station WNDU, South Bend, Indiana at a distance of 122 km, while Section 90.307(d) requires a separation of 145 km.

<sup>36</sup> See Private Land Mobile Operations in the 470-512 MHz Band, *Public Notice*, No. 20291 (rel. Oct. 22, 1991) (*1991 Public Notice*). Any waiver request must demonstrate that affected co-channel TV stations are provided 50 dB protection at their Grade B contours (64 dBu), and affected adjacent channel TV stations receive 0 dB protection at their Grade B contours. *Id.*

<sup>37</sup> See Part 90 Request, Exhibit 3.

<sup>38</sup> See Part 90 Request, Exhibit 5.

find it significant that Chicago makes representations in these letters to cooperate with the affected TV stations should any interference occur and to take all steps necessary to identify, resolve, and eliminate the interference.<sup>39</sup> As Chicago notes, it already utilizes TV Channel 15 frequencies at the same location as the proposed operations pursuant to a waiver granted in 2001.<sup>40</sup> In light of the foregoing, we conclude that Chicago has demonstrated that its proposed modification would adequately protect co-channel and adjacent channel TV stations, and that the underlying purpose of the rules would not be served by application to this case. We also find that granting a waiver serves the public interest.<sup>41</sup>

#### IV. CONCLUSION

14. We conclude based on the record before us that Chicago's waiver requests satisfy the criteria set forth under Section 337(c) of the Act and Section 1.925 of the Commission's Rules for grant of its requests for waiver to permit it to supplement its public safety communications system with additional frequencies in the 470-482 MHz band. Accordingly, we grant Chicago's waiver requests.

#### V. ORDERING CLAUSES

15. Accordingly, **IT IS ORDERED** that, pursuant to Section 1.925 of the Commission's Rules, 47 C.F.R. § 1.925, and Sections 4(i) and 337(c) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), 337(c), the requests for waiver associated with the captioned application filed by the City of Chicago on April 25, 2005, as amended, **ARE GRANTED**, and File No. 0002136559 **SHALL BE PROCESSED** consistent with this *Order* and the Commission's Rules.

16. This action is taken under delegated authority pursuant to Sections 0.131 and 0.331 of the Commission's Rules, 47 C.F.R. §§ 0131, 0331.

FEDERAL COMMUNICATIONS COMMISSION

Michael J. Wilhelm  
Chief, Public Safety and Critical Infrastructure Division  
Wireless Telecommunications Bureau

---

<sup>39</sup> *Id.*

<sup>40</sup> Part 90 Request at 4; *see* license for Station WPSG985. We have received no interference complaints in connection with the existing station.

<sup>41</sup> *See* para. 11, *supra*.