

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

In the Matter of Application of	)	
	)	
MILWAUKEE METROPOLITAN SEWERAGE	)	FCC File Nos. 0001923176, 0001953696,
DISTRICT	)	0002082677
	)	
Request for Waiver to Expand Fixed Operations	)	
On a Primary Basis in the 450-470 MHz Band	)	

**MEMORANDUM OPINION AND ORDER**

**Adopted: July 5, 2006**

**Released: July 7, 2006**

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

**I. INTRODUCTION**

1. We have before us three applications and associated requests for waiver of the Commission's Rules filed by the Milwaukee Metropolitan Sewerage District (MMSD).<sup>1</sup> MMSD seeks authority to expand its fixed wireless Supervisory Control and Data Acquisition (SCADA) system to monitor and control water levels and flow within its sewerage system. For the reasons discussed below, we grant MMSD's waiver requests, with the conditions described herein.

**II. BACKGROUND**

2. On February 11, 2004, the Wireless Telecommunications Bureau, Public Safety and Critical Infrastructure Division (Division) granted MMSD's request for a waiver of Section 90.261(a) and (c)<sup>2</sup> of the Commission's Rules.<sup>3</sup> Specifically, the grant permitted MMSD to operate four base frequencies (frequency pairs 453/458.475, 453/458.850, and 453/458.925 MHz under Call Sign WPZP631, and frequency pair 453/458.750 MHz under Call Sign WPZP657) at four fixed locations (three in Milwaukee County, one in Waukesha County) with gain antennas on a primary basis.<sup>4</sup> A waiver was required because Section 90.261(a) of the Commission's Rules permits fixed use in the 450-470 MHz band only on a secondary basis to land mobile operations, and Section 90.261(c) limits fixed system omnidirectional antennas to unity gain.<sup>5</sup> The grant to MMSD was conditioned on MMSD not causing interference to the State of Wisconsin Department of Transportation's (WisDOT) statewide operations on Station KNJW977 on frequency pairs 453/458.475 and 453/458.925 MHz. In addition, the grant authorized the use of four corresponding mobile frequencies at three hundred temporary fixed locations within thirty-two kilometers of the associated fixed stations. The Division noted that MMSD requested primary status to allow it to

<sup>1</sup> See attachments to FCC File Nos. 0001923176, 0001953696 (Waiver Request A), and 0002082677 (Waiver Request B).

<sup>2</sup> 47 C.F.R. § 90.261(a), (c).

<sup>3</sup> See Milwaukee Metropolitan Sewerage District, *Order*, 19 FCC Rcd 2623 (WTB PSCID 2004) (*Order*).

<sup>4</sup> Each fixed location is assigned one frequency pair.

<sup>5</sup> 47 C.F.R. § 90.261(a), (c).

work with other licensees to resolve any interference issues, rather than being forced to shut down immediately if interference problems were to develop.<sup>6</sup>

3. On November 3, 2004, MMSD filed an application and waiver request seeking primary authorization on frequency pair 453/458.650 MHz.<sup>7</sup> Specifically, MMSD requests three additional locations (two in Milwaukee County, one in Ozaukee County) and five temporary fixed stations operating on the base frequency; three hundred temporary fixed stations operating on the mobile frequency, and twenty control stations operating on MMSD's previously authorized frequencies 458.475, 458.750, 458.850, and 458.925 MHz. The application was reviewed by FCC-certified frequency coordinators the Forestry Conservation Communications Association (FCCA) and the Association of Public-Safety Communications Officials-International, Inc. (APCO).<sup>8</sup> Specifically, APCO noted that WisDOT objects to MMSD's expanded use of frequencies 458.475 and 458.925 MHz due to potential interference to operations under WisDOT's statewide license.<sup>9</sup> Further, APCO stated that MMSD failed to account for potential interference on frequency 453.650 MHz to co-channel Station WQAH264, Delavan, Wisconsin, licensed to the Town of Delavan (Delavan).<sup>10</sup> However, MMSD attached to its waiver request a contour study for frequency 453.650 MHz taking into account co-channel and adjacent channel licensees, and indicating that MMSD's proposed interference contours do not overlap Delavan's service contours.<sup>11</sup> FCCA recommended that the application be granted with the special conditions contained in the previous *Order*,<sup>12</sup> plus a special condition that temporary fixed stations operating on frequency 453.650 MHz must not interfere with Station WQAH264 and Station KNIB478, Delavan, Wisconsin, licensed to the Delavan Lake Sanitary District.<sup>13</sup>

4. On November 30, 2004, MMSD filed an application and waiver request seeking primary authorization on frequency pair 453/458.100 MHz.<sup>14</sup> Specifically, MMSD requests four additional locations (three in Waukesha County, one in Milwaukee County) and four temporary fixed stations operating on the base frequency; three hundred temporary fixed stations operating on the mobile frequency; and twenty control stations operating on MMSD's previously authorized frequencies 458.475, 458.750, 458.850, and 458.925 MHz. MMSD attached a frequency coordinator statement from FCCA, which includes a statement of conditional consent from APCO.<sup>15</sup> APCO stated that it did not object to this application, provided that operations on frequencies 458.475 and 458.925 MHz are secondary to

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<sup>6</sup> See *Order*, 19 FCC Rcd at 2625 ¶ 7.

<sup>7</sup> FCC File No. 0001923176 (filed November 3, 2004, as amended July 21, 2005).

<sup>8</sup> *Id.*, Letter dated Nov. 2, 2004 from David Pagel, Region II Frequency Coordinator, Forestry Conservation Communications Association, to Federal Communications Commission (FCCA November 2 Letter). The letter contains a statement from Michelle Fink, AFC Processing Services Manager, APCO International.

<sup>9</sup> *Id.* at 1-2.

<sup>10</sup> *Id.* at 2.

<sup>11</sup> See Waiver Request A, Attachment Three, Contour Study 453.6500 MHz.

<sup>12</sup> See *Order*, 19 FCC Rcd at 2627 ¶ 11. The special conditions are: 1) MMSD must accept interference from WisDOT's operations under Call Sign KNJW977; 2) MMSD's operations must not interfere with WisDOT's use of its statewide temporary mobile frequencies (453/458.475 and 453/458.925 MHz) and, if warranted, MMSD must develop a mutually agreeable plan with WisDOT to mitigate interference.

<sup>13</sup> FCC File No. 0001923176 FCCA Letter at 1, 3.

<sup>14</sup> FCC File No. 0001953696 (filed November 30, 2004, as amended July 21, 2005).

<sup>15</sup> *Id.*, Letter dated Nov. 30, 2004 from David Pagel, Region II Frequency Coordinator, Forestry Conservation Communications Association, to Federal Communications Commission. The letter contains a statement of conditional consent from Vicki Menzel, Technical Assistant, APCO International.

existing licensees.<sup>16</sup> FCCA recommended that the application be granted with the special conditions contained in the previous *Order*.<sup>17</sup> MMSD attached a contour study for frequency 453.100 MHz, which demonstrated that MMSD's proposed interference contours do not overlap the service contours of any incumbent co-channel licensees.<sup>18</sup> On July 21, 2005, MMSD amended both applications with a letter of consent from the County of Milwaukee, which is authorized on frequency pairs 453/458.100 MHz and 453/458.650 MHz under Call Sign KRZ404.<sup>19</sup>

5. Both applications also seek a waiver of Section 90.137(b) of the Commission's Rules, which requires that when any fixed or base station unit(s) authorized at temporary locations remains in operation at the same location for more than one year, the user shall file an application for a separate authorization specifying the fixed location.<sup>20</sup> MMSD operates approximately three hundred low power, low elevation remote monitoring or control stations throughout its system and anticipates, at a minimum, doubling the number with the planned system expansion.<sup>21</sup> MMSD requests a waiver of this rule because the remotes may remain in their respective locations for more than a year.<sup>22</sup>

6. On March 14, 2005, MMSD filed an application and waiver request seeking primary authorization on frequency 453.850 MHz (already authorized to MMSD's Station WPZP631) at one of the fixed sites requested in the November 3, 2004 application.<sup>23</sup> The application was coordinated by FCCA.<sup>24</sup>

7. On November 25, 2005, the Division sought comment on MMSD's first two applications and waiver request.<sup>25</sup> We received comments from the Enterprise Wireless Alliance (EWA), APCO, WisDOT, and MMSD. MMSD and Delavan filed reply comments.

### III. DISCUSSION

8. To obtain a waiver of the Commission's Rules, a petitioner must demonstrate either that the underlying purpose of the rule(s) would not be served or would be frustrated by application to the present case and that grant of the waiver would be in the public interest,<sup>26</sup> or that, in view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly

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<sup>16</sup> *Id.* at 1.

<sup>17</sup> *Id.* at 2. *See* n.12, *supra*.

<sup>18</sup> *See* Waiver Request A, Attachment Two, Contour Study 453.1000 MHz.

<sup>19</sup> FCC File Nos. 0001923176, 0001953696, Letter dated April 12, 2004 from Ted David, Communications Coordinator, Milwaukee County, Wisconsin to Bill Farmer, Milwaukee Metropolitan Sewer District.

<sup>20</sup> *See* 47 C.F.R. § 90.137(b).

<sup>21</sup> Waiver Request A at 4.

<sup>22</sup> *Id.*

<sup>23</sup> FCC File No. 0002082677 (filed March 14, 2005, as amended April 14, 2005).

<sup>24</sup> Frequency Coordination No. FC200533046.

<sup>25</sup> *See* Wireless Telecommunications Bureau Seeks Comment on Request for Waiver by Milwaukee Metropolitan Sewerage District to Expand Fixed Operation on a Primary Basis in the 450-470 MHz Band, *Public Notice*, 20 FCC Rcd 18884 (WTB PSCID 2005). The Division did not place the third application on public notice because the proposed operation will not expand the service contour of Station WPZP631, but rather will provide stronger coverage in an area receiving marginal coverage from existing repeaters. *See* Waiver Request B at 1.

<sup>26</sup> 47 C.F.R. § 1.925(b)(3)(i).

burdensome, or contrary to the public interest, or the applicant has no reasonable alternative.<sup>27</sup> We believe that MMSD has shown that a waiver grant is warranted under the circumstances presented, and consistent with Division's analysis of MMSD's previous request.

9. Regarding MMSD's requests to operate control stations on the four previously authorized frequencies, we agree with FCCA that these operations should be permitted subject to the same conditions imposed on MMSD's use of these frequencies in the *Order*. WisDOT opposes this expanded use of these frequencies because of the increased potential for interference to WisDOT's operations.<sup>28</sup> We note, however, that WisDOT does not report any actual interference from MMSD's current operations. Moreover, the special conditions on MMSD's license require it to avoid interference to WisDOT's operations on the frequencies the two licensees share. We also believe that MMSD's use of these frequencies for control stations present a smaller potential for interference because control station antennas are typically lower than base station antennas.<sup>29</sup> Finally, as we previously noted, because WisDOT's use of the temporary statewide channels would be highly localized and WisDOT has a fixed system operating in the area on other frequencies, we believe that MMSD's use of frequencies 458.475 and 458.925 MHz would have little to no effect, adverse or otherwise, on WisDOT's operations.<sup>30</sup> For these reasons, we conclude that grant of the requests is appropriate, under the existing special conditions.<sup>31</sup>

10. We note that Delavan does report actual interference from MMSD's SCADA system on frequency pair 453/458.925 MHz. Specifically, Delavan contends that due to MMSD's continuous transmitted carrier on these frequencies, Delavan is experiencing missed emergency radio traffic, unintelligible alerting pages to fire personnel, and disrupted fire ground communications.<sup>32</sup> As MMSD notes in its reply comments, these concerns regarding frequency pair 453/458.925 MHz apply primarily to MMSD's existing operations on Station WPZP631 rather than the instant requests.<sup>33</sup> As noted above, we do not believe that MMSD's proposed control stations on frequency 458.925 MHz create an increased potential for interference. However, we remind MMSD that it requested primary status to allow it to work with other licensees to resolve any interference issues, rather than being forced to shut down immediately at some point in the future if interference problems were to develop, and that it acknowledged that sharing of the channels might be necessary.<sup>34</sup> Accordingly, we expect MMSD to work with Delavan to resolve interference from MMSD's operations on Station WPZP631 on frequency pair 453/458.925 MHz.

11. Regarding MMSD's requests to add frequency 453.850 MHz and frequency pairs 453/458.100 and 453/458.650 MHz at various locations, the only objection in the record pertains to

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<sup>27</sup> 47 C.F.R. § 1.925(b)(3)(ii).

<sup>28</sup> See WisDOT Comments at 1.

<sup>29</sup> The typical antenna height for a control station is twenty feet (6.1 meters) above ground or an existing man-made structure. See 47 C.F.R. § 90.119(b). MMSD requests 6.1 meter control stations. See FCC File No. 0001923176.

<sup>30</sup> See *Order*, 19 FCC Rcd at 2626 ¶ 11.

<sup>31</sup> We find unpersuasive WisDOT's suggestion that MMSD should be authorized only on a secondary basis, or with limits on the gain of its omnidirectional antennas. See WisDOT Comments at 1.

<sup>32</sup> Letter from Robert E. Rajchel, System Engineer, Communications Management, L.L.C (on behalf of the City of Delavan) to Office of the Secretary, Federal Communications Commission (dated Dec. 20, 2005) at 1.

<sup>33</sup> MMSD Reply Comments at 2-3.

<sup>34</sup> See *Order*, 19 FCC Rcd at 2625 ¶ 7.

frequency pair 453/458.650 MHz.<sup>35</sup> As noted above, MMSD provided a contour analysis indicating that MMSD's proposed interference contours do not overlap Delavan's service contours.<sup>36</sup> Moreover, we believe that MMSD's proposed operations on frequency pair 453/458.650 MHz presents less potential for interference than its present operations on frequency pair 453/458.925 MHz, because the associated base station will be located approximately twelve kilometers farther from Delavan than MMSD's base station for frequency pair 453/458.925 MHz. FCCA recommends imposing a special condition stating that MMSD's temporary fixed stations must not interfere with Delavan on frequency 453.650 MHz.<sup>37</sup> We believe it is appropriate to require that none of MMSD's operations interfere with Delavan on frequency pair 453/458.650 MHz. Consequently, we will grant the requests, so conditioned.

12. Next, we consider MMSD's request for waiver of Section 90.137(b), which requires that when any fixed or base station unit(s) authorized at a temporary location remains in operation at the same location for more than one year, the user shall file an application for a separate authorization specifying the fixed location.<sup>38</sup> Under the second prong of the waiver standard, MMSD has demonstrated that its circumstances are unusual in that several hundred remote monitoring and control stations are necessary to continuously monitor and control the flow of water in the system and related water levels, in order to comply with environmental regulations, protect the environment and public health, and mitigate flooding.<sup>39</sup> We agree with MMSD that requiring the individual licensing of hundreds of remotes should they remain in place more than one year would be overly burdensome to both MMSD and the Commission with no concomitant benefit.<sup>40</sup> Accordingly, we grant a waiver of Section 90.137(b) to MMSD so that its temporary remotes may remain in place for more than one year without individual licensing.<sup>41</sup>

13. EWA, an FCC-certified frequency coordinator in the Industrial/Business (I/B) Pool, does not oppose MMSD's request because it applies only to channels in the Public Safety Pool.<sup>42</sup> However, EWA believes that any request for similar relief in the I/B Pool should be denied as inconsistent with the regulatory structure governing that spectrum and with the shared use environment applicable to the systems that utilize those channels.<sup>43</sup> Similarly, EWA's predecessor-in-interest, the Industrial Telecommunications Association,<sup>44</sup> opposed MMSD's previous waiver request for primary status on the grounds that it would set a damaging precedent by opening the door for other entities to file similar waiver requests, thus creating an environment for further degradation in the band.<sup>45</sup> The Division rejected the suggestion that no waiver should be granted on the grounds that granting too many waivers would

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<sup>35</sup> See WisDOT Comments at 1 (recommending that MMSD not use frequency pair 453/458.650 MHz in order to protect Delavan's co-channel operations).

<sup>36</sup> See para. 3, *supra*.

<sup>37</sup> See FCCA November 2 Letter at 1.

<sup>38</sup> See 47 C.F.R. § 90.137(b).

<sup>39</sup> See Waiver Request A at 1.

<sup>40</sup> *Id.* at 4. As MMSD notes, similar waivers of Section 90.137(b) have been granted to other SCADA system operators. *Id.* at 5; see, e.g., licenses for Stations WPWZ476, WPZP646, WPZP816.

<sup>41</sup> We concur with MMSD that "FXOT" is the appropriate station class code for MMSD's remotes and is consistent with previous grants for waiver of Section 90.137(b). See n.40 *supra*.

<sup>42</sup> EWA Comments at 1.

<sup>43</sup> *Id.* at 1-2.

<sup>44</sup> See Mark E. Crosby, *Letter*, 20 FCC Rcd 8552 (WTB PSCID 2005).

<sup>45</sup> See *Order*, 19 FCC Rcd at 2625 ¶ 8.

undermine the purpose of the rules.<sup>46</sup> We again conclude that this speculative concern is not a reason to deny the instant requests. Should similar waiver requests be filed, we will consider each case individually and scrutinize the effect on spectrum availability.<sup>47</sup>

14. Accordingly, we believe that a waiver grant in this case would be consistent with MMSD's previous waiver grant. However, we maintain that a grant of MMSD's requests should neither operate to reduce WisDOT's flexibility under its existing license for Call Sign KNJW977<sup>48</sup> nor result in interference to Delavan's operations. Therefore, we will impose the following conditions on MMSD's license: 1) MMSD must accept interference from WisDOT's operations under Call Sign KNJW977 and Delavan's operations under Call Signs WQAH264, KNIB478, and KNEV339; 2) MMSD's operations must not interfere with WisDOT's use of its statewide temporary mobile frequencies (453/458.475 and 453/458.925 MHz) or Delavan's operations on frequency pairs 453/458.650 and 453/458.925 MHz; and 3) if warranted, MMSD must develop a mutually agreeable plan with WisDOT and/or Delavan to mitigate interference.

15. We conclude that MMSD's waiver requests should be granted with the conditions as set forth herein, where applicable. The operation of MMSD affects the health, safety and security of approximately one million people in southeastern Wisconsin. Granting the waivers serves the public interest because the SCADA system protects the eco-system of Southeastern Wisconsin by facilitating MMSD's safety and environmental operations, such as storm water and wastewater overflow.

#### IV. ORDERING CLAUSES

16. Accordingly, pursuant to Sections 4(i) and 309(a) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 309(a), and Section 1.925 of the Commission's Rules, 47 C.F.R. § 1.925, IT IS ORDERED that the waiver requests filed by the Metropolitan Milwaukee Sewage District on November 3, 2004 with respect to application FCC File No. 0001923176, on November 30, 2003 with respect to application FCC File No. 0001953696, and on April 14, 2005 with respect to application FCC File No. 0002082677 ARE GRANTED SUBJECT TO THE CONDITIONS set forth herein, and applications FCC File Nos. 0001923176, 0001953696, and 0002082677 SHALL BE PROCESSED in accordance with this *Memorandum Opinion and Order* and the Commission's Rules.

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

FEDERAL COMMUNICATIONS COMMISSION

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

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<sup>46</sup> *Id.*

<sup>47</sup> Any future request from MMSD that, like the present applications, seeks a geographic and/or spectral expansion of primary, fixed operations on land mobile spectrum would receive particularly close scrutiny. We will not authorize fixed operations that do not leave adequate 450-470 MHz spectrum available to accommodate mobile communications in the area. *See Order*, 19 FCC Rcd at 2656 ¶ 6.

<sup>48</sup> *See id.* at 2627 ¶ 11.