

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

In the Matter of
STATE OF NEW YORK
Request for Waiver of Section 90.545 of the
Commission's Rules to Implement a 700 MHz
Public Safety System in Specified Counties in the
Greater New York City Metropolitan Area
WT Docket No. 06-18

ORDER

Adopted: December 20, 2007

Released: December 20, 2007

By the Commission:

I. INTRODUCTION

1. On October 24, 2005, the State of New York (New York) filed a request for waiver of Section 90.545 of the Commission's rules to permit it to implement a 700 MHz public safety radio communications system within specified counties in the greater New York City metropolitan area (Downstate New York) prior to the end of the transition from analog television (TV) to digital TV (DTV). For the reasons stated below, we grant New York's Waiver Request, subject to the conditions discussed herein.

II. BACKGROUND

2. New York holds a statewide, public safety license, Station WPTZ779, authorizing the use of certain frequencies within the 700 MHz band. New York originally proposed to operate in Downstate New York within the 774-776 and 804-806 MHz bands only. However, we have since established new rules for the 700 MHz band, including a shift in the public safety allocation so that it is now located at 763-775/793-805 MHz. Subsequently, New York modified its requested operations,

1 See State of New York, Request for Waiver of Section 90.545 Regarding 700 MHz Public Safety System Interference Protection for Co-Channel and Adjacent-Channel Television Stations (filed Oct. 24, 2005) (Waiver Request). This and other documents in this proceeding may be accessed online via the Commission's Electronic Comment Filing System, http://gullfoss2.fcc.gov/prod/ecfs/comsrch\_v2.cgi, under WT Docket No. 06-18.

2 47 C.F.R. § 90.545.

3 "Downstate New York" consists of Dutchess, Orange, Putnam, Rockland, Westchester, Bronx, New York, Richmond, Kings, Queens, Nassau, and Suffolk Counties. See Waiver Request at 1 n.1.

4 See Waiver Request at 2.

5 See Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band; Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, PS Docket No. 06-229, WT Docket No. 96-86, Second Report and Order, 22 FCC Rcd 15289 (2007) (700 MHz Second R&O).

shifting down one megahertz to the 773-775 MHz and 803-805 MHz bands.<sup>6</sup> Section 90.545, which generally sets forth the Commission's TV/DTV interference protection criteria, requires that public safety licensees operating in these bands reduce the potential for interference to public reception of the signals of existing TV and DTV broadcast stations transmitting on TV channels 62, 63, 64, 65, 67, 68, and 69.<sup>7</sup> New York requests a waiver of Section 90.545 to allow it to operate its proposed public safety system in Downstate New York before the end of the DTV transition, in light of New York's acknowledgment that *de minimis* interference to TV/DTV reception may occur.<sup>8</sup>

3. New York states that many public safety agencies throughout the state currently operate obsolete facilities on various incompatible frequency bands,<sup>9</sup> and that many radio systems lack sufficient in-building or wide-area coverage necessary to provide adequate response capability during emergencies.<sup>10</sup> In particular, New York states that the Metropolitan Transportation Authority Police Department's (MTAPD) communications suffer from a lack of interoperability with local police departments and insufficient coverage in rail stations and tunnels.<sup>11</sup> New York is in the process of implementing an integrated Statewide Wireless Network (SWN) to enhance interoperability for its state and local public safety and public service agencies.<sup>12</sup> New York states that there is a critical and immediate need for deployment of the SWN in Downstate New York, and that the SWN will address these issues by establishing a common, cost-efficient, and fully interoperable infrastructure for all its state and local agencies that choose to participate.<sup>13</sup>

4. Pursuant to Section 90.545(a), licensees of public safety stations must choose site locations that are a sufficient distance from co-channel and adjacent channel TV and DTV stations, must use reduced transmitting power or transmitting antenna height to meet given minimum desired-to-undesired (D/U) signal ratios, or both.<sup>14</sup> Section 90.545(b) sets forth the maximum effective radiated power (ERP) and antenna height above average terrain (HAAT) limits of proposed land mobile base stations, the associated control stations, and mobile transmitters.<sup>15</sup> Section 90.545(c)(1) sets forth three methods to meet TV/DTV protection requirements, applicable to licensees of stations operating within

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<sup>6</sup> See Letter from Hanford C. Thomas, Project Director, Statewide Wireless Network, State of New York Office for Technology, to Marlene Dortch, Secretary, Federal Communications Commission (dated Sept. 14, 2007) at 2. We find that New York's amended frequency ranges comport with the consolidated 700 MHz public safety narrowband allocation. See *id.*

<sup>7</sup> 47 C.F.R. § 90.545. On February 1, 2006, Congress established a "hard date" of February 17, 2009 for the end of the DTV transition, at which time full-power TV stations must cease over-the-air analog broadcasts and vacate TV channels 60-69. See Deficit Reduction Act of 2005, 47 U.S.C. § 309(j)(14)(A). After the DTV transition, public safety stations in the 763-775 MHz and 793-805 MHz bands no longer will be required to protect reception of co-channel or adjacent channel TV/DTV stations. See 47 C.F.R. § 90.545(c).

<sup>8</sup> Waiver Request at 2, 9.

<sup>9</sup> *Id.* at 2-3.

<sup>10</sup> *Id.* at 5.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* at 8.

<sup>13</sup> *Id.* at 8-9.

<sup>14</sup> See 47 C.F.R. § 90.545(a). A D/U ratio is the difference between the strength of a desired signal and the strength of an undesired signal, expressed in decibels. In this case, the desired signal comes from a broadcast TV/DTV station, and the undesired signal comes from New York's public safety radio operations.

<sup>15</sup> See 47 C.F.R. § 90.545(b).

the ERP and HAAT limits of paragraph (b).<sup>16</sup> Section 90.545(c)(2) sets forth the method for determining geographic separations between base stations and TV/DTV stations.<sup>17</sup> Below, we discuss how New York does not meet Sections 90.545(a), (b), (c)(1), and (c)(2), and thus requires a waiver.<sup>18</sup>

5. In support of its request, New York prepared an Engineering Study to demonstrate that the proposed public safety operations in Downstate New York would not cause significant interference to off-air TV reception on TV Channels 63, 64, 65, 68 and 69.<sup>19</sup> The intent of the Engineering Study is to justify base station-to-TV/DTV station separation distances less than those permitted in Section 90.545.<sup>20</sup> The Engineering Study considers the effects of New York's proposed fixed and mobile operations on nine TV stations.<sup>21</sup> New York opines that, while some interference is predicted, the number of affected viewers would be *de minimis*,<sup>22</sup> and the interference would end upon the completion of the DTV transition.<sup>23</sup> Specifically, with regard to nine co-channel and adjacent channel TV stations, New York projects that interference will affect less than one percent of each station's service population.<sup>24</sup>

6. As discussed further below, our decision in *Qualcomm* is instructive to the instant analysis regarding a *de minimis* exception. By way of background, in the *Qualcomm* decision,<sup>25</sup> we, *inter alia*, recognized a *de minimis* exception to the required distance separations and D/U ratios for protecting

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<sup>16</sup> See 47 C.F.R. § 90.545(c)(1). Licensees of stations operating within the ERP and HAAT limits of § 90.545(b) must select one of three methods to meet the TV/DTV protection requirements, subject to Commission approval: (i) utilize the geographic separation specified in the tables referenced in § 90.545(c)(2); (ii) submit an engineering study justifying the proposed separations based on the parameters of the land mobile station and the parameters, including authorized and/or applied for facilities, of the TV/DTV station(s) it is trying to protect; or (iii) obtain written concurrence from the applicable TV/DTV stations(s). *Id.*

<sup>17</sup> See 47 C.F.R. § 90.545(c)(2), which obtains distances from specified tables in 47 C.F.R. § 90.309.

<sup>18</sup> See *infra* para. 19.

<sup>19</sup> See 90.545 Engineering Study, Downstate New York 700 MHz Public Safety Operations, filed by New York (Oct. 24, 2005) (Engineering Study). See also Supplement, filed by New York (Mar. 13, 2006) (First Engineering Supplement), and Supplemental Engineering Study for Reply Comments, filed by New York (Apr. 4, 2006) (Second Engineering Supplement).

<sup>20</sup> See Engineering Study at 47.

<sup>21</sup> The TV stations are: WMBC (63 NTSC), Newton, NJ; WNAC (64 NTSC), Providence, RI; WPVI (64 DTV), Philadelphia, PA; WQPX (64 NTSC), Scranton, PA; WEDY (65 NTSC), New Haven, CT; WUVP (65 NTSC), Vineland, NJ; WFUT (68 NTSC), Newark, NJ; WFMZ (69 NTSC), Allentown, PA; and WPXQ (69 NTSC), Block Island, RI.

<sup>22</sup> See Waiver Request at 13-15 (citing 47 C.F.R. § 73.623(c)).

<sup>23</sup> See Waiver Request at 13.

<sup>24</sup> Specifically, New York projects that interference would affect 0.96% or less of each station's service population. *Id.* For specific affected population percentages, see *infra* Appendix. Although New York requests that we take into consideration that cable and satellite subscriptions reduce the amount of viewers relying on over-the-air broadcasts, (see Waiver Request at 11), the Engineering Study's predicted percentages do not discount for cable and satellite penetration.

<sup>25</sup> See Qualcomm Incorporated Petition for Declaratory Ruling, WT Docket No. 05-7, *Order*, 21 FCC Rcd 11683, 11686 n.25 (2006) (*Qualcomm*) (approving the use of "OET Bulletin No. 69, Longley-Rice Methodology for Evaluating TV Coverage and Interference," Office of Engineering and Technology, Federal Communications Commission (Feb. 6, 2004) (OET-69), with certain modifications, as an acceptable methodology for demonstrating whether Qualcomm's MediaFLO system complies with the Commission's rules on interference protection in the 700 MHz Band).

incumbent broadcasters in the context of Section 27.60.<sup>26</sup> In reaching our decision, we noted that “the applicable interference rule [S]ection 27.60 (and rule [S]ection 90.545 applicable to 700 MHz public safety operation) rely upon required separation distances and D/U ratios that in turn are based upon application of *predictive* engineering models.”<sup>27</sup> We further noted that, while Part 27 does not provide for a *de minimis* interference exception, “such thresholds have been applied in the broadcast context.”<sup>28</sup> We granted Qualcomm a limited waiver using a measured approach where the allowable predicted interference to a TV/DTV station’s service caused by the MediaFLO system will increase incrementally each year from the release of the *Qualcomm* order until the end of the DTV transition.<sup>29</sup>

7. New York’s Engineering Study purports to: (i) demonstrate that the separation criteria of Section 90.545 are satisfied for Station WNAC-TV, Channel 64, Providence, RI, and Station WUVP-TV, Channel 65, Vineland, NJ,<sup>30</sup> and (ii) show either no impact or *de minimis* impact using standard interference procedures to identify the percentage of population affected within each relevant TV/DTV station’s analog Grade B or noise-limited DTV service contour.<sup>31</sup> New York states that the results of its Engineering Study find that “in no case is the impact of interference greater than [one] percent of the [TV] station’s service population, and for most the impact is far less, ranging from just 0.01 [percent] to 0.96 [percent].”<sup>32</sup>

8. First, we describe the methodology of the Engineering Study. For fixed base stations operating in the Channel 64 Band and mobile/portable operations in the Channel 69 Band, New York evaluated the co-channels (TV Channels 64 and 69) and adjacent channels (TV Channels 63, 65, and 68) for potential interference to over-the-air reception. For the base station interference analysis, New York identified those of its proposed base stations that do not meet the interference protection criteria of Section 90.545 for each affected TV station operating on TV Channels 63, 64, and 65.<sup>33</sup> Next, New York defined the study area of each TV and DTV station as the areas enclosed by the analog Grade B and DTV service contour, respectively.<sup>34</sup> The study area is divided into cells, which are square surface area tiles with 3-arc second latitude and longitude dimensions.<sup>35</sup> New York used the Longley-Rice propagation model<sup>36</sup> to determine the signal strengths of the TV/DTV station (the “desired” signal strength) at each cell. For those cells having a desired signal strong enough to be received, New York

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<sup>26</sup> See *Qualcomm*, 21 FCC Rcd at 11685 ¶ 6, 11696-11699 ¶¶ 27-32.

<sup>27</sup> *Id.* at 11697 ¶ 29 (emphasis in original).

<sup>28</sup> *Id.*

<sup>29</sup> The allowable predicted interference to a TV/DTV station’s service caused by the MediaFLO system will increase incrementally each year from the release of *Qualcomm* until the end of the DTV transition in February 2009: 0.5 percent of the population within the TV/DTV station’s Grade B contour for the first year, 1.0 percent for the second year, and 1.5 percent for the remainder of the DTV transition. See *Qualcomm*, 21 FCC Rcd at 11698 ¶ 30.

<sup>30</sup> Waiver Request at 11; Engineering Study at 11, 57-58 (Attachment 4).

<sup>31</sup> Waiver Request at 11; Engineering Study at 2, 26; Second Engineering Supplement at 6, 8, 10.

<sup>32</sup> Waiver Request at 11; Engineering Study at 2. See also *infra* Appendix.

<sup>33</sup> Engineering Study at 55 (Attachment 4).

<sup>34</sup> *Id.* at 13.

<sup>35</sup> *Id.*

<sup>36</sup> The Longley-Rice radio propagation model makes “predictions of radio field strength at specific geographic points based on the elevation profile of terrain between the transmitter and each specific reception point.” See OET-69 at 1.

used the Longley-Rice model to predict the “undesired” field strengths of its noncompliant base stations. Then New York summed these “undesired” field strengths and compared the resulting D/U signal strength ratios to the minimum required protection threshold values.<sup>37</sup> For simplicity, New York conducted its base station interference simulations at a single frequency of 773.000 MHz so that all transmitted output power would accumulate on one frequency.<sup>38</sup> Where the D/U ratio failed to meet or exceed the threshold, the population in the cell was counted as receiving interference.<sup>39</sup> Finally, New York summed the populations of such affected cells and computed the percentage of the total population predicted to receive interference. The population count was obtained from U.S. Census Bureau Year 2000 data.<sup>40</sup>

9. For the mobile interference analysis, New York identified all TV stations operating on TV Channels 68 and 69 that are short-spaced to any proposed base stations with associated mobile units.<sup>41</sup> New York noted that mobile operational characteristics such as locations, number of simultaneous transmissions, and duration are essentially random.<sup>42</sup> Therefore, New York employed Monte Carlo statistical modeling simulations to conduct a large number of mobile radio distribution trials to the extent that the interference estimation results achieve a statistically significant representation of the actual interference environment.<sup>43</sup> New York conducted 1,000 or 2,000 random placement trials per each set of simultaneously transmitting mobile units for each broadcaster interference situation.<sup>44</sup> Again, New York computed a D/U ratio for each cell receiving service and computed the percentage of affected population.<sup>45</sup>

10. On January 26, 2006, the Wireless Telecommunications Bureau (WTB) placed New York’s Waiver Request on public notice.<sup>46</sup> We received seven comments,<sup>47</sup> one late-filed comment,<sup>48</sup>

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<sup>37</sup> For co-channel stations, New York used the D/U ratios required by 47 C.F.R. § 90.545(a)(1). For adjacent channel stations, New York used the D/U ratios required by FCC Office of Engineering and Technology Report TM87-1, Receiver Susceptibility Measurements Relating to Interference Between UHF Television and Land Mobile Radio Services, Daniel J. Stanks, dated April 1986. See Engineering Study at 15.

<sup>38</sup> Engineering Study at 22.

<sup>39</sup> *Id.* at 14.

<sup>40</sup> *Id.* at 20.

<sup>41</sup> *Id.* at 12.

<sup>42</sup> *Id.* at 15.

<sup>43</sup> *Id.* Monte Carlo methods are a widely used class of computational algorithms for simulating the behavior of various physical and mathematical systems. Monte Carlo simulation methods are stochastic, *i.e.*, nondeterministic in some manner.

<sup>44</sup> *Id.* at 16, 18.

<sup>45</sup> *Id.* at 17-18.

<sup>46</sup> See Wireless Telecommunications Bureau Seeks Comment on Request for Waiver of Television Interference Rules by the State of New York to Implement a 700 MHz Public Safety Communications System, WT Docket No. 06-18, *Public Notice*, 21 FCC Rcd 336 (WTB PSCID 2006) (*Public Notice*). At New York’s request, WTB extended the reply comment deadline to April 4, 2006. See Wireless Telecommunications Bureau Extends Reply Comment Deadline for Request for Waiver of Television Interference Rules by the State of New York to Implement a 700 MHz Public Safety Communications System, WT Docket No. 06-18, *Public Notice*, 21 FCC Rcd 3103 (WTB PSCID 2006). Pursuant to Commission reorganization effective September 25, 2006, the relevant duties of the Public Safety and Critical Infrastructure Division of the Wireless Telecommunication Bureau were assumed by the Policy Division of the Public Safety and Homeland Security Bureau. See Establishment of the Public Safety and Homeland Security Bureau, *Order*, 21 FCC Rcd 10867 (2006).

and six reply comments.<sup>49</sup> In addition, we received three subsequent *ex parte* letters in support of the Waiver Request.<sup>50</sup> The *Public Notice* asked commenters to address whether the Waiver Request “is an appropriate vehicle for considering approval of a system that is allowed to cause some amount of predicted interference to TV and DTV service” and, alternatively, whether the Waiver Request “should be considered first in another context, such as the broader Qualcomm [Petition for Declaratory Ruling],” which was pending before the Commission when the *Public Notice* was released.<sup>51</sup>

11. *Comments.* The majority of commenters to the *Public Notice* support the Waiver Request. APCO, NPSTC and Qualcomm believe that it would be in the public interest to permit New York to implement the proposed SWN in the Downstate New York area prior to the end of the DTV transition.<sup>52</sup> Qualcomm states that New York presents a powerful public interest argument for improved public safety communications.<sup>53</sup> Maranatha, licensee of TV Channel 69, Station WFMZ-TV, Allentown, Pennsylvania, states that New York’s operations in the TV Channel 69 band would not result in significant interference to its viewers.<sup>54</sup> The Region Planning Committees (RPCs) of the State of Missouri area and State of Tennessee area state New York’s operations would cause minimal interference to TV viewers because the interference is predicted to be below the two percent *de minimis* standard of Section 73.623(c).<sup>55</sup> Regarding the Engineering Study, M/A-COM, Inc. supports New York’s

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<sup>47</sup> Comments of the State of New York (filed Mar. 13, 2006) (New York Comments); Comments of the Association of Public-Safety Communications Officials, International, Inc. (filed Mar. 13, 2006) (APCO Comments); Comments of Maranatha Broadcasting Company, Inc. (filed Mar. 13, 2006) (Maranatha Comments); Comments of QUALCOMM Incorporated (filed Mar. 13, 2006) (Qualcomm Comments); Comments of the Region 24 700 MHz Regional Planning Committee (filed Mar. 13, 2006) (Region 24 RPC Comments); Comments of Mountain Broadcasting Corporation (filed Mar. 13, 2006) (Mountain Comments); and Comments of WFUT-TV (filed Mar. 13, 2006) (WFUT Comments).

<sup>48</sup> Comments of the Region 39 700 MHz Regional Planning Committee (filed Mar. 21, 2006) (Region 39 RPC Comments).

<sup>49</sup> Reply Comments of the State of New York (filed Apr. 4, 2006) (New York Reply Comments); Reply Comments of M/A-COM, Inc. (filed Apr. 4, 2006) (M/A-COM Reply Comments); Reply Comments of the National Public Safety Telecommunications Council (filed Mar. 28, 2006) (NPSTC Reply Comments); Reply Comments of QUALCOMM Incorporated (filed Apr. 4, 2006) (Qualcomm Reply Comments); Reply Comments of Mountain Broadcasting Corporation (filed Apr. 4, 2006) (Mountain Reply Comments); and Reply Comments of WFUT-TV (filed Apr. 4, 2006) (WFUT Reply Comments).

<sup>50</sup> See Letter from Carl W. Carlton, Director, Communications & Technology, New York State Police to Marlene H. Dortch, Secretary, Federal Communications Commission (dated June 23, 2006); Letter from Daniel DeFedericis, President, Police Benevolent Association of the New York State Troopers, Inc. to Marlene H. Dortch, Secretary, Federal Communications Commission (dated June 27, 2006); and Letter from Hanford C. Thomas, Deputy Director, New York State Office for Technology, to The Honorable Kevin Martin, Chairman, Federal Communications Commission (dated Mar. 1, 2007).

<sup>51</sup> *Public Notice* at 2; see Pleading Cycle Established for Qualcomm Incorporated Petition for Declaratory Ruling, WT Docket No. 05-7, *Public Notice*, 20 FCC Rcd 1293 (WTB MD 2005).

<sup>52</sup> APCO Comments at 2; NPSTC Comments at 4, 7; Qualcomm Comments at 1.

<sup>53</sup> Qualcomm Comments at 2.

<sup>54</sup> Maranatha Comments at 2.

<sup>55</sup> Region 24 RPC Comments at 2-3; Region 39 RPC Comments at 2-3. See 47 C.F.R. § 73.623(c).

analytical methods and results.<sup>56</sup> NPSTC also believes that New York presents a reasoned and analytic description of how its operations would interact with and protect broadcast services.<sup>57</sup>

12. However, Mountain Broadcasting Corporation (Mountain), licensee of Station WMBC-TV, Newton, New Jersey, operating on TV Channel 63, the lower-adjacent channel to New York's proposed base station operations, and WFUT-TV, licensee of Station WFUT-TV, Newark, New Jersey, operating on TV Channel 68, the lower-adjacent channel to New York's proposed mobile operations, express concerns about certain facets of New York's Engineering Study.<sup>58</sup> Mountain expresses concern that the Engineering Study is unique and difficult to reproduce and verify.<sup>59</sup> Mountain and WFUT-TV also contend that the Engineering Study is not transparent and does not provide technical assumptions.<sup>60</sup> Moreover, Mountain and WFUT-TV state that New York's Engineering Study does not contain sufficient information to warrant a waiver of the Commission's interference protection rules.<sup>61</sup> Mountain and WFUT-TV also argue that the Engineering Study does not correctly consider their respective stations' facilities.<sup>62</sup> As discussed below, we find the Engineering Study, as supplemented, is acceptable because it is based on a methodology that reasonably predicts interference.

13. WFUT-TV believes that the Waiver Request should be considered in a larger context so that the Commission may assess and design, with input from numerous parties, a methodology to determine the extent of interference between such broadcast and land mobile operations.<sup>63</sup> WFUT-TV states that such a proceeding would establish the appropriate thresholds for prohibited interference, as well as consider how to mitigate interference, particularly in the "mobile-into-fixed" environment.<sup>64</sup> Qualcomm replies that considering the Waiver Request in a broader proceeding would delay the deployment of much-needed land mobile systems, such as New York's.<sup>65</sup> Qualcomm states that each waiver request should be judged on its individual merits.<sup>66</sup>

14. On March 13, 2006, New York submitted a First Engineering Supplement to include an amended analysis for Station WFUT-TV.<sup>67</sup> Specifically, New York included Land Use Land Cover losses for determining the receive service area, and New York used a lower desired TV signal reception

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<sup>56</sup> M/A-COM Reply Comments at 3.

<sup>57</sup> NPSTC Reply Comments at 6.

<sup>58</sup> See Mountain Comments at 1-5; WFUT-TV Comments at 2, 4, 6, 8.

<sup>59</sup> See Mountain Comments, attached Technical Statement at 3-4.

<sup>60</sup> See Mountain Comments at 4; WFUT-TV Comments, attached Engineering Statement in Support of Comments at 3-5. Further, Mountain and WFUT-TV argue that New York's analysis does not take into account interference to cable viewers through cable head-ends, some of which may receive WMBC-TV and WFUT-TV signals over the air. See Mountain Comments at 2, n.1; WFUT-TV Comments at 18. Mountain and WFUT-TV, however, do not provide evidence that any cable head-ends would be affected by New York's operations.

<sup>61</sup> Mountain Comments at 2; WFUT-TV Comments at 1.

<sup>62</sup> See Mountain Comments at 4; WFUT-TV Comments, attached Engineering Statement in Support of Comments at 3-5.

<sup>63</sup> WFUT-TV Comments at 19.

<sup>64</sup> *Id.*

<sup>65</sup> Qualcomm Reply Comments at 2.

<sup>66</sup> *Id.*

<sup>67</sup> See First Engineering Supplement.

threshold.<sup>68</sup> We note that the results from the First Engineering Supplement are superseded in light of a subsequent filing.

15. On April 4, 2006, New York submitted a Second Engineering Supplement attached to its Reply Comments.<sup>69</sup> First, the Second Supplement corrects errors from the Engineering Study with respect to the parameters of Mountain's and WFUT-TV's licensed facilities.<sup>70</sup> Next, the Second Engineering Supplement lists the relevant Longley-Rice propagation model parameters and technical assumptions taken into consideration for the analyses of interference to Stations WFUT-TV and WMBC.<sup>71</sup> Finally, the Second Engineering Supplement reflects a revised initial deployment around transportation corridors, in response to WFUT-TV's observation that New York's initial mobile operations would be concentrated in those areas.<sup>72</sup> Due to this deployment, New York states that the pre-2009 deployment of mobile and portable units will have a total quantity much less than the SWN as fully-deployed,<sup>73</sup> and the new results computed for Station WFUT-TV are based on fewer simultaneous mobile transmissions.<sup>74</sup> New York's revised analysis for WFUT-TV reveals that 0.098% of the service population would be subject to potential interference, which is about half the percentage projected in the initial study based on full system deployment.<sup>75</sup> New York's revised analysis for WMBC-TV indicates that 0.21% of the population in its service area would be subject to potential interference, and that this percentage would be expected to drop to 0.10% if Base Station Site Number 72 were not used.<sup>76</sup>

16. On December 14, 2007, Mountain submitted a late-filed letter reiterating its general opposition to New York's request and objecting to New York's amendment to shift its operations down one megahertz to conform to our *700 MHz Second R&O*.<sup>77</sup> In its letter, Mountain states that because New York's amended waiver would bring New York's operations one megahertz closer to the upper edge of WMBC-TV's allotment, "in all likelihood" the potential of actual interference to WMBC-TV's viewers

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<sup>68</sup> *Id.* at 1.

<sup>69</sup> *See* Second Engineering Supplement.

<sup>70</sup> *See id.* at 5, 7, 10. *See also* New York Reply Comments at 2-3, 6.

<sup>71</sup> *See* Second Engineering Supplement at 1-2, 9.

<sup>72</sup> *See id.* at 4; New York Reply Comments at 3. *See also* WFUT-TV Comments, attached Engineering Statement in Support of Comments, in WT Docket No. 06-18 at 20.

<sup>73</sup> Second Engineering Supplement at 4.

<sup>74</sup> *Id.* at 6. The new results are based on 120 simultaneous mobile transmissions, while the original Engineering Study and First Engineering Supplement were based on 300 simultaneous mobile transmissions. *See* Engineering Study at 26; First Engineering Supplement at 2.

<sup>75</sup> *See* Second Engineering Supplement at 6; New York Reply Comments at 3.

<sup>76</sup> *See* New York Reply Comments at 6-7. New York states that it is prepared to accept a condition that it not transmit on 700 MHz channels from Base Station Site Number 72 without first taking field measurements satisfactory to Mountain to determine whether Station WMBC can be viewed over the air in the area surrounding the site. If WMBC can be viewed in this area, New York states that it would not initiate 700 MHz band service from Base Station Site Number 72 prior to February 18, 2009, absent the consent of Mountain. *Id.*

<sup>77</sup> *See* Letter from Mark B. Denbo, Counsel to Mountain Broadcasting Corporation, Fleischman and Harding LLP, to Ms. Marlene Dortch, Secretary, Federal Communications Commission (dated Dec. 14, 2007).



would increase.<sup>78</sup> On December 17, 2007, New York filed a response stating that Mountain's letter only serves to reiterate Mountain's prior objections.<sup>79</sup>

### III. DISCUSSION

17. Regarding the suitability of the Waiver Request, we do not find WFUT-TV's comments persuasive for the reasons stated by Qualcomm,<sup>80</sup> especially given the impending February 17, 2009 date by which TV operations must vacate the 700 MHz Band. Accordingly, we find that the waiver process in this instance is an appropriate vehicle for considering approval of a system that is allowed to cause some amount of predicted interference to TV and DTV service. With regard to the second issue of whether we should consider the Waiver Request in another context such as Qualcomm's, we determined that New York's Waiver Request differed from Qualcomm's in certain key procedural and technical respects, and thus declined to address it in the *Qualcomm* decision.<sup>81</sup> The second issue therefore is moot.

18. Our analysis of New York's Waiver Request is three-fold. We first discuss reasons why New York requires waiver relief. Because any engineering study submitted to justify proposed separations from TV/DTV stations must be approved by the Commission,<sup>82</sup> we next examine the sufficiency of New York's Engineering Study submitted in support of its Waiver Request. Finally, we consider whether, in light of New York's public interest showing and Engineering Study, a waiver of Section 90.545 is warranted.

19. *Section 90.545.* New York does not meet the interference protection requirements of Section 90.545. Specifically, New York requires a waiver of Section 90.545(a) to the extent that the Engineering Study acknowledges that certain areas, or cells, within an affected TV station's Grade B contour do not satisfy the minimum D/U ratios.<sup>83</sup> Next, New York requires a waiver of Section 90.545(b) to the extent that some or all base stations would have ERP and HAAT levels that exceed the allowable levels, depending on which TV station is affected.<sup>84</sup> In addition, New York requires a waiver of Section 90.545(c)(1) because it is not qualified to use the three methods to meet TV/DTV protection requirements, because each proposed base station would *not* operate within the ERP and HAAT limits with respect to at least one affected TV/DTV station. Finally, New York requires a waiver of Section

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<sup>78</sup> *Id.*

<sup>79</sup> See Letter from Robert M. Gurss, Counsel for State of New York, Fletcher, Heald & Hildreth, P.L.C., to Ms. Marlene Dortch, Secretary, Federal Communications Commission (dated Dec. 17, 2007).

<sup>80</sup> See *supra* para. 13.

<sup>81</sup> See *Qualcomm*, 21 FCC Rcd at 11686 n.25.

<sup>82</sup> See 47 C.F.R. § 90.545(c)(1)(ii).

<sup>83</sup> See Engineering Study at 14. Multiple cells comprise the study area used to conduct New York's interference analysis. The study area encompasses all interior cells and those cells aligned along the Grade B contour. New York states that the TV signal level may be less than the Grade B threshold in some study area cells because of irregular terrain blockage. *Id.* at 13.

<sup>84</sup> See Engineering Study at 9-11, 55-66 (Attachment 4). New York proposes to operate a total of 99 base stations. See Engineering Study at 52-54 (Attachment 3). New York provided the number of noncompliant base stations that do not meet the geographic separation requirements of Section 90.545(c) for each affected TV/DTV station ("noncompliant base stations") for each affected TV/DTV station operating on TV channels 63, 64, and 65 as follows: WMBC – 76; WNAC – 0; WPVI – 35; WQPX – 61; WEDY – 72; WUVP – 0. See *id.* at 11. New York also provided the number of noncompliant base stations with mobiles for each TV station operating on TV channels 68 and 69 as follows: WFMZ – 71; WFUT – 99; WPXQ – 61. See *id.* at 12.

90.545(c)(2) to the extent that each proposed base station also would fail to meet the required geographic separations with respect to at least one affected TV/DTV station.<sup>85</sup>

20. *Sufficiency of Engineering Study.* We now turn to our assessment of the Engineering Study, as supplemented, while addressing comments. Mountain and WFUT-TV argue that New York's reliance on the *Aloha Partners*<sup>86</sup> and *Access Spectrum* decisions<sup>87</sup> as precedent is inappropriate due to the much larger scale of New York's request<sup>88</sup> and because neither case involved mobile-into-fixed interference.<sup>89</sup> Regarding the large scale nature of New York's proposal, we agree with New York that the number of fixed sites is irrelevant, so long as the Engineering Study demonstrates that no significant interference would occur.<sup>90</sup> WFUT-TV expresses concern that New York's Engineering Study does not cite to any relevant precedent which supports the use of techniques and assumptions from "fixed-into-fixed" interference for an analysis of "mobile-into-fixed" interference, as is the case here.<sup>91</sup> WFUT-TV states, "[m]obile-into-fixed interference is intermittent, ... widespread, ... annoying, and ... almost impossible for the consumer to identify and mitigate."<sup>92</sup>

21. Regarding mobile interference, we concur with New York that statistical modeling is the most appropriate method to analyze the random nature of mobile-into-fixed interference.<sup>93</sup> We note that New York's Second Engineering Supplement contains a detailed example of how to calculate interference from simultaneously transmitting mobile units to a single TV receiver.<sup>94</sup> We concur with New York's response that households affected by New York's mobile operations would not lose the ability to view the applicable TV station;<sup>95</sup> rather, they would be subject only to the possibility of rare and momentary interference to reception during the remaining period before the end of the DTV transition.<sup>96</sup> We further believe that chances of interference from mobile units would be minimal because the Engineering Study assumed the worst-case scenarios in order to reduce the number of random variables in the simulations.<sup>97</sup> For example, New York conducted the study using 30-watt ERP for mobile radios, although actual operations would see a lower-powered mix of 15-watt ERP mobile radios

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<sup>85</sup> See *supra* note 84 for numbers of noncompliant base stations.

<sup>86</sup> See *Aloha Partners, Memorandum Opinion and Order*, 20 FCC Rcd 3744 (WTB 2005) (*Aloha Partners MO&O*) (granting a conditional waiver of Section 27.60 to allow Aloha Partners to implement a wireless broadband service from seven base stations within a licensed service area, short-spaced to an adjacent channel TV station operating on Channel 58).

<sup>87</sup> See *Access Spectrum, LLC, Memorandum Opinion and Order*, 19 FCC Rcd 15545 (WTB 2004) (*Access Spectrum MO&O*) (granting a conditional waiver of Section 27.60 to allow Access Spectrum, LLC to operate a trunked land mobile base station, short-spaced to an adjacent channel TV station operating on Channel 61).

<sup>88</sup> See Mountain Comments at 5.

<sup>89</sup> WFUT-TV Comments, attached Engineering Statement in Support of Comments at 8.

<sup>90</sup> New York Reply Comments at 7.

<sup>91</sup> WFUT-TV Comments, attached Engineering Statement in Support of Comments at 8.

<sup>92</sup> *Id.*

<sup>93</sup> See Engineering Study at 15-18.

<sup>94</sup> Second Engineering Supplement at 2-4.

<sup>95</sup> New York Reply Comments at 5.

<sup>96</sup> *Id.*

<sup>97</sup> See Engineering Study at 17.

and 3-watt ERP portable radios.<sup>98</sup> Also, New York conducted all mobile interference simulations at a single frequency of 803.000 MHz so that all transmitted output power would accumulate on one frequency.<sup>99</sup> Frequency 803.000 MHz is three megahertz above the upper edge of TV channel 68. In actuality, mobile operations would be spread over the frequency range 803-805 MHz, thereby reducing the transmitted output power accumulation on any one frequency.<sup>100</sup>

22. In a related matter, we note that the one megahertz shift that we adopted in the *700 MHz Second R&O* does not affect the applicability of New York's Engineering Study, as supplemented. All interference simulations were conducted at 773.000 MHz and 803.000 MHz,<sup>101</sup> which are at the lower band edges of the requested 773-775 MHz and 803-805 MHz bands, respectively. Since the original requested bands were 774-776 and 804-806 MHz, we find that after the one megahertz shift, the Engineering Study, as supplemented predicts more accurately the interference potential. Mountain's December 14, 2007, letter in which it renewed its prior arguments and objected to this one megahertz shift does not provide any new information that would alter this conclusion.<sup>102</sup> Therefore, we conclude that no further engineering analysis is required to compensate for the shift.

23. New York indicates that several protection analysis methodologies pertaining to spectrum sharing between TV broadcasters and land mobile radio operators, including Commission-published documents OET TM87-1 and OET-69, have either influenced or been incorporated into its Engineering Study.<sup>103</sup> Therefore, we find that New York's comprehensive methodology is based on generally accepted engineering practices to analyze fixed and mobile radio to TV receiver interference on a large scale, as discussed above.<sup>104</sup> We find the Engineering Study, as supplemented, properly and clearly outlines the analytical and technical processes it employed to evaluate interference potential.<sup>105</sup> We also find that New York provided sufficient information, as its Engineering Study provides a comprehensive list of the operating parameters of all 99 base stations at issue and their proposed operating frequencies.<sup>106</sup> Further, we find that the Engineering Study, as supplemented, provides sufficient transparency because it lists the relevant technical assumptions and parameters taken into consideration.<sup>107</sup> Accordingly, we approve New York's Engineering Study for the purpose of demonstrating predicted interference from New York's public safety operations in Downstate New York to the reception of TV/DTV stations.

24. *Request for Waiver.* As discussed above, New York requires a waiver because: (i) it does not meet the appropriate D/U signal ratios at the existing TV stations' authorized Grade B service contours, or equivalent contour for at least one DTV station, as required by Section 90.545(a); (ii) several of the base stations do not meet the ERP and HAAT limits set forth in Section 90.545(b); and (iii) several

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<sup>98</sup> *Id.*

<sup>99</sup> *Id.*

<sup>100</sup> *Id.* at 17, 22.

<sup>101</sup> *Id.*

<sup>102</sup> *See supra* note 77.

<sup>103</sup> *See* Engineering Study at 13, 24.

<sup>104</sup> *See supra* paras. 8-14.

<sup>105</sup> Engineering Study at 13-18, 20-21; Second Engineering Supplement at 1-2, 9.

<sup>106</sup> *See* Engineering Study at 3-4, 52-54 (Attachment 3), 49-51 (Attachment 2).

<sup>107</sup> *See* Second Engineering Supplement at 1-2, 9.

of the base stations would be short-spaced to existing TV/DTV stations, contrary to the requirements of Section 90.545(c).<sup>108</sup>

25. To obtain a waiver of the Commission's rules, a petitioner must demonstrate either that: (i) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the present case, and that a grant of the waiver would be in the public interest; or (ii) in view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome, or contrary to the public interest,<sup>109</sup> or the applicant has no reasonable alternative.<sup>110</sup> An applicant seeking a waiver faces a high hurdle and must plead with particularity the facts and circumstances that warrant a waiver.<sup>111</sup>

26. As the Commission noted when it adopted Section 90.545, while protecting public reception of TV and DTV stations is in the public interest, reliance on the technical criteria contained in tables may prevent public safety entities from fully utilizing the spectrum in a number of major metropolitan areas until after the transition period ends.<sup>112</sup> As a result, public safety applicants are permitted to submit engineering studies to justify proposed separations "without causing excessive interference to TV/DTV stations."<sup>113</sup> As discussed above, New York does not meet the interference requirements of Section 90.545.<sup>114</sup> Against this backdrop, we therefore must determine whether the underlying purpose of Section 90.545 would not be served or would be frustrated by application to New York's use of a *de minimis* standard as part of its alternative showing, pursuant to Section 90.545.

27. We return to our decision in *Qualcomm* as it is instructive to our instant analysis. After conducting our own review of the Engineering Study, we note that the affected population percentages predicted by New York are within the *de minimis* standards and exceptions established in *Qualcomm*.<sup>115</sup> Due to the incremental increase of allowable interference in *Qualcomm*, the *de minimis* allowance changed from 0.5 percent to 1.0 percent effective October 13, 2007.<sup>116</sup> Therefore, the percentages of TV station service populations predicted to receive interference, with a maximum of 0.96 percent, are now within the current 1.0 percent *de minimis* allowance.

28. Based on our observations, we therefore disagree with WFUT-TV's contention that the *de minimis* threshold is inapplicable to the Waiver Request.<sup>117</sup> *Qualcomm* observes in its comments to the instant Waiver Request that Section 90.545 does not state that there should be no interference to TV

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<sup>108</sup> See Engineering Study at 55, Attachment 4.

<sup>109</sup> 47 C.F.R. § 1.925(b)(3)(i).

<sup>110</sup> 47 C.F.R. § 1.925(b)(3)(ii).

<sup>111</sup> *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969), *aff'd*, 459 F.2d 1203 (D.C. Cir. 1972), *cert. denied*, 409 U.S. 1027 (1972) (*citing Rio Grande Family Radio Fellowship, Inc. v. FCC*, 406 F.2d 664 (D.C. Cir. 1968)); Birach Broadcasting Corporation, *Memorandum Opinion and Order*, 18 FCC Rcd 1414, 1415 ¶ 6 (2003).

<sup>112</sup> See *supra* para. 17; Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, WT Docket No. 96-86, *First Report and Order and Third Notice of Proposed Rulemaking*, 14 FCC Rcd 152, 224 ¶ 158 (1998) (*Public Safety Service Rules Order*).

<sup>113</sup> *Public Safety Service Rules Order*, 14 FCC Rcd at 224 ¶ 158.

<sup>114</sup> See *supra* para. 19.

<sup>115</sup> See *infra* Appendix. See also *Qualcomm*, 21 FCC Rcd at 11698 ¶ 30.

<sup>116</sup> See *Qualcomm*, 21 FCC Rcd at 11698 ¶ 30.

<sup>117</sup> See WFUT-TV Comments at 10-12.

reception, as suggested by WFUT-TV,<sup>118</sup> but rather that land mobile stations must take steps to reduce the potential for interference.<sup>119</sup> Thus, as NPSTC and Qualcomm point out, we find that the use of a *de minimis* allowance, given the specific facts presented, is appropriate in the instant matter.<sup>120</sup> This conclusion is consistent both with the text of Section 90.545 and with the determination in *Qualcomm* (interpreting identical language in Section 27.60 with respect to potential interference) that a *de minimis* exception was proper. We also find that our determination to grant the Waiver Request is consistent with the flexibility envisioned by the 1998 *Public Safety Rules Order* and the underlying purpose of Section 90.545.<sup>121</sup>

29. In addition to our assessment of the predictive nature of TV/DTV protection requirements, we also base our decision on the public interest benefits New York's proposed SWN would provide to Downstate New York. We recognize the public interest in reducing the potential for interference to the public's reception of existing TV and DTV broadcasts. At the same time, we also must consider the Commission's public interest purpose "of promoting safety of life and property."<sup>122</sup> On balance, we therefore find that grant of the Waiver Request, subject to conditions specified herein, is consistent with the public interest. In reaching this conclusion, we consider significant the fact that New York is able to demonstrate that it would cause only *de minimis*, if any, interference to broadcast operations as well as the impending February 17, 2009 "hard date" by which incumbent analog broadcasters must vacate the spectrum.<sup>123</sup> We therefore find that any potential *de minimis* interference from New York's operations to TV channels 63, 64, 65, 68, and 69 will diminish even further as consumers migrate from viewing analog TV channels to viewing DTV channels in other broadcast bands.<sup>124</sup>

30. We find that granting the Waiver Request would be consistent with our goal "of promoting safety of life and property" because it would enable state and local government public safety use of an integrated and interoperable wireless network throughout Downstate New York.<sup>125</sup> Specifically, we find New York's Waiver Request demonstrates that early access to 700 MHz spectrum is necessary in order to address the deficiencies described by New York<sup>126</sup> and promote effective public safety communications. New York states that the SWN will fulfill an immediate need for law enforcement operations and the MTAPD, which oversees the public's safety on and around all Metropolitan Transit Authority facilities.<sup>127</sup> New York also states that MTAPD's communications lack

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<sup>118</sup> See *id.* at 10-11 citing Amendment of Parts 73 and 74 of the Commission's Rules for Digital Low Power Television, Television Translator, and Television Booster Stations and to Amend Rules for Digital Class A Television Stations, *Report and Order*, 19 FCC Rcd 19331, 19367 ¶ 103 (2004).

<sup>119</sup> See Qualcomm Comments at 6.

<sup>120</sup> NPSTC Reply Comments at 4-5; Qualcomm Comments at 7.

<sup>121</sup> See *supra* note 112. Because we consider each application on a case-by-case basis, however, we decline to specify two percent as the general *de minimis* standard in the land mobile-to-TV/DTV context.

<sup>122</sup> See 47 U.S.C. § 151.

<sup>123</sup> We note that our consideration of interference with regard to New York's Waiver Request does not extend or otherwise affect the provisions for a graduated *de minimis* interference allowance that we adopted in *Qualcomm*.

<sup>124</sup> See *Qualcomm*, 21 FCC Rcd at 11699 ¶ 32.

<sup>125</sup> See *supra* para. 3.

<sup>126</sup> See Waiver Request at 4-7.

<sup>127</sup> *Id.* at 5.

interoperability with local police departments and lack sufficient coverage in rail stations and tunnels.<sup>128</sup> In this connection, New York states that deployment of the SWN will enhance interoperability for MTAPD as well as its state and local public safety and public service agencies.<sup>129</sup> We find deployment of the SWN will contribute to “a forward-looking policy that drives toward the end-point of the DTV transition”<sup>130</sup> as public safety radio systems are upgraded and widely integrated on interoperable platforms. We therefore conclude that a grant of the Waiver Request is consistent with the public interest to the extent it would enable New York to use the 700 MHz band for public safety operations over a dedicated, reliable and interoperable network.

31. Based on the facts before us, we therefore conclude that a waiver is appropriate, subject to certain conditions set forth below. In the *Public Notice*, WTB sought comment on whether a waiver granted to New York should be conditioned on a requirement that New York correct any reported interference to TV or DTV reception, and whether we should impose any other conditions.<sup>131</sup> While we find that conditions placed on the waiver are appropriate, especially in light of the possibility of *de minimis* interference, we are not convinced by Mountain’s comments that New York should be required to either (1) respond to or resolve every complaint of interference<sup>132</sup> or (2) notify all potentially affected viewers in advance of operation.<sup>133</sup> While potential interference complaints arising from mobile-to-fixed operations is an issue worth safeguarding against, we believe that the particular solutions Mountain proposes would be overly burdensome and cause potential delay in the deployment of SWN.<sup>134</sup> For similar reasons, we also reject suggestions by WFUT-TV and Mountain that would require New York to evaluate “real-world” interference of each base station prior to SWN’s authorization.<sup>135</sup>

32. In an effort to permit New York to deploy its proposed public safety operations in the 700 MHz band through the end of the DTV transition, while at the same time provide adequate safeguards to protect TV viewers from harmful interference, we therefore grant the Waiver Request subject to the following conditions:

- (a) Operations granted pursuant to this Order are limited to frequencies in the 773-775 and 803-805 MHz portions of the band.
- (b) At least ten business days prior to activating one or more sites, New York shall provide a notification of intent to activate the site(s) to the Chief, Public Safety and Homeland Security Bureau, Federal Communications Commission, 445 12th Street, SW, Washington, DC 20554, and all affected broadcasters, as determined by use of the Engineering Study. For each base station, the notification shall contain the base station location address and geographic

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<sup>128</sup> *Id.* at 8-9.

<sup>129</sup> *Id.* at 8.

<sup>130</sup> *Qualcomm*, 21 FCC Rcd at 11697 ¶ 28.

<sup>131</sup> *See Public Notice*, 21 FCC Rcd at 337.

<sup>132</sup> Mountain Comments at 6. New York observes in its comments that there are numerous potential sources of interference in urban areas such as New York, and that addressing every viewer’s complaint in light of this observation would be unduly burdensome. New York states that it is not opposed to a requirement that it make reasonable efforts to correct documented interference to TV or DTV reception clearly caused by its public safety operations. *See* New York Comments at 2.

<sup>133</sup> Mountain Comments at 6-7.

<sup>134</sup> *See* WFUT-TV Comments, attached Engineering Statement in Support of Comments at 8.

<sup>135</sup> WFUT-TV Reply Comments at 17; Mountain Comments at 6.

coordinates, effective radiated power, antenna height, beam tilt, and proposed date of activation. Notifications also shall include a single point of contact within the State of New York for resolving interference. Information for multiple base stations may be included on a single notification if the stations are to be activated on the same date. This notification requirement shall remain in effect until the end of the DTV transition.

(c) New York must respond to any TV station that notifies New York that it has (1) received interference complaints from viewers, and (2) reasonably believes that New York is the source of the interference within the TV station's Grade B contour or DTV station's 41 dBu noise-limited contour, with the initial notification of the interference incident(s) specifying the specific geographic location(s), date(s) and time(s) of incident(s), and a single point of contact for the TV station. New York must respond to the initial notification within twenty-four hours of receipt. New York and the affected TV station should work together to determine if New York is in fact the source of interference. If so, then New York must take prompt steps to work with the TV station and correct the case of interference.<sup>136</sup>

(d) New York must accept interference from all incumbent full power TV stations operating in the 700 MHz Band until the end of the DTV transition. New York may not protest or request restrictions on any incumbent broadcaster's authorized operations.

(e) New York shall not operate mobile, portable, and control stations below 803.000 MHz, until the end of the DTV transition.<sup>137</sup>

(f) New York must operate in accordance with its license for Station WPTZ779 and the technical parameters set forth in its Engineering Study, as supplemented, and as conditioned herein. New York will not be permitted under this waiver to cause new interference to any broadcast facility entitled to protection that already experiences interference to ten percent or more of its analog TV Grade B or protected DTV service population or that would result in a station receiving interference in excess of ten percent of its analog Grade B or DTV service population. For further modifications,<sup>138</sup> New York will be required to file a Form 601 modification application and an appropriate engineering study, which are subject to Commission approval.

(g) New York may not transmit on 700 MHz Band channels from Base Station Site Number 72 without first taking field measurements to determine whether Station WMBC-TV can be viewed

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<sup>136</sup> For example, New York may be able to cease transmissions at a particular site for a short period of time (less than a day, so as not to unduly disrupt New York's operations) to allow the TV station to test whether New York is or is not the source of interference at a particular location.

<sup>137</sup> Mountain observes that Section 90.531(a), 47 C.F.R. § 90.531(a), permits mobile, portable or control station operation in the lower public safety band. *See* Mountain Comments, attached Technical Statement at 6. Since New York based its waiver request solely on the use of the lower band by fixed base station transmitters, Mountain indicates that the Commission should not permit New York to operate mobile, portable, or control stations in the entire 700 MHz lower public safety band. *Id.* We believe that this condition helps to ensure that the percentage of affected population receiving TV channels 63, 64, and 65 does not exceed the amounts New York predicted in its Engineering Study, as supplemented. We further restrict mobile, portable or control stations from operating below 803.000 MHz to ensure that the percentage of affected population receiving TV channel 68 does not exceed the amounts New York predicted in its Engineering Study, as supplemented.

<sup>138</sup> *See* 47 C.F.R. §§ 1.929, 1.947.

over the air in the area surrounding the site, within the TV station's Grade B contour.<sup>139</sup> The measurements must either be taken in a manner consistent with Section 73.686 of the Commission's rules<sup>140</sup> or conducted with the involvement of Station WMBC-TV. If reception of Station WMBC-TV on Channel 63 is possible, New York may not initiate 700 MHz Band service from Base Station Site Number 72, absent the consent of Mountain. This condition shall remain in effect until the end of the DTV transition.

(h) No fixed base station, mobile, or portable unit will transmit using 700 MHz frequencies east of 72.9 degrees west longitude (approximately Suffolk County Route 46 on Long Island), until the end of the DTV transition.<sup>141</sup>

#### IV. CONCLUSION

33. Based on the record before us, we conclude that granting New York's Waiver Request, subject to the conditions herein, is warranted and serves the public interest because it will enable New York to use only frequencies in the 773-775 and 803-805 MHz bands to supplement its public safety communications system in Downstate New York before February 17, 2009, the established date for completion of the DTV transition.

#### V. ORDERING CLAUSES

34. Accordingly, IT IS ORDERED that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), and Section 1.925 of the Commission's rules, 47 C.F.R. § 1.925, the Request for Waiver of Section 90.545 Regarding 700 MHz Public Safety System Interference Protection for Co-Channel and Adjacent Channel Television Stations, filed by the State of New York on October 24, 2005, as amended, IS GRANTED AS CONDITIONED HEREIN.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

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<sup>139</sup> New York states that it is prepared to accept a special condition for site #72. See New York Reply Comments at 6-7.

<sup>140</sup> 47 C.F.R. § 73.686.

<sup>141</sup> New York agrees to this condition as a control measure. See Engineering Study at 4-5.



## APPENDIX

Table of TV Stations and Affected Population Percentages from New York's Engineering Study, As Supplemented<sup>142</sup>

TV Station	Status	Channel	TV Offset	New York Operation Mode	Number of Base Stations	Grade B Population	Interference Population	% Affected Population
WMBC	LIC	63	Adj	Base	76	4,427,067	10,233	0.231*
WNAC	LIC	64	Co	Base	0	0	0	0.000**
WPVI-DT	CP-MOD	64	Co	Base	35	8,802,671	63,130	0.720
WQPX	LIC	64	Co	Base	61	449,342	4,315	0.960
WEDY	LIC	65	Adj	Base	72	477,302	0	0.000
WUVP	LIC	65	Adj	Base	0	0	0	0.000**
WFUT	LIC	68	Adj	Mobile***	99	15,923,730	15,565	0.098*
WFUT	CP	68	Adj	Mobile***	99	16,263,645	14,704	0.090*
WFMZ	LIC	69	Co	Mobile****	71	3,448,565	434	0.010
WPXQ	LIC	69	Co	Mobile****	61	1,253,697	0	0.000

\* modified value from the Second Engineering Supplement

\*\* Study not required, § 90.545(c)(2) compliant

\*\*\* based on 120 simultaneous, randomly placed mobile transmissions<sup>143</sup>

\*\*\*\* based on 300 simultaneous, randomly placed mobile transmissions

<sup>142</sup> Engineering Study at 2, 26, Second Engineering Supplement at 6, 8, 10.

<sup>143</sup> New York's revised analysis reflects 120 simultaneous mobile transmission as the worst case rather than 300 transmissions because under the revised analysis, New York assumes that its initial deployment prior to February 17, 2009 will be limited. Specifically, New York anticipates that actual use will be concentrated along transportation corridors. See New York Reply Comments at 3-4.