

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

In the Matter of )  
 )  
Wireless E911 Location Accuracy Requirements ) PS Docket No. 07-114  
 )

**SECOND REPORT AND ORDER**

**Adopted: September 23, 2010**

**Released: September 23, 2010**

By the Commission: Chairman Genachowski and Commissioners Copps, McDowell, Clyburn, and Baker issuing separate statements.

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**I. INTRODUCTION**

1. One of the most important opportunities afforded by mobile telephony is the potential for the American public to have access to emergency services personnel during times of crisis, wherever they may be. To ensure this benefit is realized, however, public safety personnel must have accurate information regarding the location of the caller. Without precise location information, public safety’s ability to provide critical services in a timely fashion becomes far more difficult, if not impossible. Accordingly, this order requires wireless carriers to take steps to provide more specific automatic location information in connection with 911 emergency calls to Public Safety Answering Points (PSAPs) in areas where they have not done so in the past. As a result of this order, emergency responders will be able to

reach the site of an emergency more quickly and efficiently. In addition, in a companion Further Notice of Proposed Rulemaking and Notice of Inquiry that we adopt today, we build on the order and explore how to further enhance location accuracy for existing and new wireless voice communications technologies, including new broadband technologies associated with deployment of Next Generation 911 (NG911) networks.

2. To accomplish these goals, in this Second Report and Order, we revise section 20.18(h)<sup>1</sup> of the Commission's rules, which specifies standards for wireless Enhanced 911 (E911) Phase II location accuracy and reliability. Specifically, we now require wireless licensees subject to Section 20.18(h) to satisfy these standards at either a county-based or PSAP-based geographic level. We also revise the requirements of section 20.18(h) for handset-based and network-based location technologies.

## II. BACKGROUND

3. On June 1, 2007, the Commission released a Notice of Proposed Rulemaking (*Notice*) seeking comment on the appropriate geographic area over which to measure compliance with Section 20.18(h), as well as a variety of additional questions about how to improve 911 location accuracy and reliability.<sup>2</sup> In the *Notice*, the Commission indicated that carriers should not be permitted to average their accuracy results over vast service areas, because carriers thereby could assert that they satisfy the requirements of Section 20.18(h) without meeting the accuracy requirements in substantial segments of their service areas.<sup>3</sup> The Commission stated that although measuring location accuracy at the PSAP level may present challenges, the public interest demands that carriers and technology providers strive to ensure that when wireless callers dial 911, emergency responders are provided location information that enables them to reach the site of the emergency as quickly as possible.<sup>4</sup> Because many carriers were not measuring and testing location accuracy at the PSAP service area level, the Commission sought comment on whether to defer enforcement of Section 20.18(h) if the Commission adopted its tentative conclusion to require compliance at the PSAP level.<sup>5</sup>

4. On November 20, 2007, the Commission released a Report and Order (*First Report and Order*) requiring wireless licensees to satisfy the E911 accuracy and reliability standards at a geographic level defined by the service area of a PSAP.<sup>6</sup> The decision to adopt a PSAP-level compliance requirement was responsive to a request for declaratory ruling filed by the Association of Public-Safety Communications Officials-International, Inc. (APCO) asking that the Commission require carriers to meet the Commission's location accuracy requirements at the PSAP service area level.<sup>7</sup> Specifically, the

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<sup>1</sup> 47 C.F.R. § 20.18(h).

<sup>2</sup> Wireless E911 Location Accuracy Requirements; Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; 911 Requirements for IP-Enabled Service Providers, PS Docket No. 07-114, CC Docket No. 94-102, WC Docket No. 05-196, *Notice of Proposed Rulemaking*, 22 FCC Rcd 10609 (2007) (*Notice*).

<sup>3</sup> *Notice*, 22 FCC Rcd at 10611-12 ¶ 5.

<sup>4</sup> *Id.* at 10612 ¶ 6.

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

<sup>6</sup> Wireless E911 Location Accuracy Requirements; Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems; 911 Requirements for IP-Enabled Service Providers, PS Docket No. 07-114, CC Docket No. 94-102, WC Docket No. 05-196, *First Report and Order*, 22 FCC Rcd 20105, 20108 ¶ 8 (*First Report and Order*).

<sup>7</sup> *See id.* at 20107 ¶ 6; Association of Public-Safety Communications Officials-International, Inc. Request for Declaratory Ruling, CC Docket No. 94-102, at 1 (filed Oct. 6, 2004).

*First Report and Order* established interim annual requirements leading to an ultimate deadline of September 11, 2012 for achieving compliance with section 20.18(h) at the PSAP level, for both handset-based and network-based technologies.<sup>8</sup> Several carriers filed with the Commission Motions for Stay of the *First Report and Order*, seeking a stay of the effectiveness of the rules adopted in the *First Report and Order* pending judicial review.<sup>9</sup> Following petitions for review filed with respect to the *First Report and Order*, on March 25, 2008, the United States Court of Appeals for the District of Columbia Circuit (Court) stayed the *First Report and Order*.<sup>10</sup>

5. On July 14, 2008, APCO and the National Emergency Number Association (NENA) filed an *ex parte* letter stating that they “are now willing to accept compliance measurements at the county level” rather than at the PSAP level.<sup>11</sup> APCO and NENA added that “[p]ublic safety and wireless carriers are in current discussions on a number of other issues associated with E9-1-1, with the goal of improving information available to PSAPs. There are areas of agreement in concept; however, the details are still being developed.”<sup>12</sup>

6. On July 31, 2008, the Commission filed with the Court a Motion for Voluntary Remand and Vacatur, which requested remand based on the proposals contained in the July 14 *ex parte* letter and “[i]n light of the public safety community’s support for revised rules.”<sup>13</sup> Following this filing with the Court, NENA, APCO, Verizon Wireless, Sprint Nextel Corporation (Sprint Nextel), and AT&T Inc. (AT&T) submitted written *ex parte* letters with the Commission with proposed new wireless E911 rules.<sup>14</sup> On September 17, 2008, the Court granted the Commission’s Motion for Voluntary Remand.<sup>15</sup>

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<sup>8</sup> *First Report and Order*, 22 FCC Rcd at 20112 ¶ 17, App. B.

<sup>9</sup> Sprint Nextel Motion for Stay (filed Jan. 28, 2008); T-Mobile Application for Expedited Stay (filed Jan. 28, 2008); Rural Cellular Association Motion for Stay *Pendente Lite* (filed Jan. 28, 2008); Alltel Corporation Response in Support of Motions for Stay (filed Feb. 4, 2008); Verizon Wireless Request for Stay Pending Judicial Review (filed Feb. 8, 2008); AT&T Motion for Expedited Stay Pending Judicial Review (filed Feb. 29, 2008).

<sup>10</sup> *Rural Cellular Association and T-Mobile USA, Inc. v. Federal Communications Commission and the United States of America*, No. 08-1069, slip op. at 1 (D.C. Cir. Mar. 25, 2008) (per curiam).

<sup>11</sup> Letter from Willis Carter, President, APCO, and Ronald Bonneau, President, NENA, to Derek Poarch, Chief, Public Safety and Homeland Security Bureau, FCC, filed July 14, 2008, at 1 (APCO/NENA July 14 Ex Parte).

<sup>12</sup> *Id.* at 2.

<sup>13</sup> Motion of Federal Communications Commission for Voluntary Remand and Vacatur, Rural Cellular Association and T-Mobile et al. v. Federal Communications Commission and United States of America, No. 08-1069 (D.C. Cir. July 31, 2008).

<sup>14</sup> Letter from Brian Fontes, CEO, NENA, Robert M. Gurss, Director, Legal & Gov’t Affairs, APCO, and John T. Scott, III, VP & Deputy General Counsel, Verizon Wireless, to Kevin J. Martin, Chairman, FCC, filed Aug. 20, 2008, at 1 (NENA/APCO/Verizon Aug. 20 Ex Parte); Letter from Anna M. Gomez, Vice President, Federal and State Regulatory and Lawrence R. Krevor, Vice President, Spectrum, Sprint Nextel Corporation, to Kevin Martin, Chairman, FCC, filed Aug. 21, 2008 (Sprint Nextel Aug. 21 Ex Parte); Letter from Brian Fontes, CEO, NENA, Robert M. Gurss, Director, Legal & Gov’t Affairs, APCO, and Robert W. Quinn, Jr., SVP – Federal Regulatory, AT&T, filed Aug. 25, 2008 (APCO/NENA/AT&T Aug. 25 Ex Parte); Letter from John T. Scott, III, Vice President and Deputy General Counsel – Regulatory Law, Verizon Wireless, to Marlene H. Dortch, Secretary, FCC, filed Sept. 5, 2008, at 1-2 (Verizon Sept. 5 Ex Parte); Letter from Joan Marsh, Vice President – Federal Regulatory, AT&T, to Marlene H. Dortch, Secretary, FCC, filed Sept. 5, 2008 at 2 (AT&T Sept. 5 Ex Parte); Letter from Robert M. Gurss, Director, Legal and Governmental Affairs, APCO International, and Brian Fontes, Chief Executive Officer, NENA, to Marlene Dortch, Secretary, FCC, filed on Sept. 9, 2008 at 1 (APCO/NENA Sept. 9 Ex Parte).

<sup>15</sup> Order Granting Mot. Rem. (Sept. 17, 2008).

7. On September 22, 2008, the Public Safety and Homeland Security Bureau (Bureau) released a Public Notice seeking comment on the proposals submitted in the *ex parte* letters.<sup>16</sup> The Bureau sought comment on the proposed changed accuracy requirements, including the benchmarks, limitations, and exclusions, for handset-based and network-based location technologies.<sup>17</sup> The Bureau also sought comment on pledges to convene industry groups to explore related issues, and whether the Commission should require the provision of confidence and uncertainty data, as well as any alternative modifications to location accuracy requirements.<sup>18</sup> The Bureau urged all interested parties to review the entirety of the *ex parte* letters.<sup>19</sup> A list of parties submitting comments in response to both the *Notice* and the *Bureau Public Notice* is attached as Appendix A.

8. On November 4, 2008, the Commission adopted two Orders approving applications for transfers of control, involving Verizon Wireless and ALLTEL Corporation, and Sprint Nextel and Clearwire Corporation, conditioned upon their voluntary agreements to abide by the conditions set forth in their respective *ex parte* letters, which are identical to the wireless E911 proposals they submitted in this proceeding. In each case, the Commission found that these conditions would “further ensure that consummation of the proposed merger serves the public interest, convenience and necessity.”<sup>20</sup>

9. On November 20, 2009, in light of the passage of time, the Bureau released a Public Notice seeking to refresh the record.<sup>21</sup> Specifically, the Bureau sought comment on whether subsequent developments in the industry and technology may have affected parties’ positions on the issues raised.<sup>22</sup> A list of parties submitting comments in response to the *Second Bureau Public Notice* is attached as Appendix A.

10. On June 16, 2010, T-Mobile USA, Inc. (T-Mobile) filed an *ex parte* letter stating that it would agree to comply with the benchmarks for network-based location technologies that were proposed in the APCO/NENA/AT&T Aug. 25 Ex Parte, with several modifications.<sup>23</sup> On June 30, 2010, the Rural Cellular Association (RCA) filed an *ex parte* letter stating that it supports the proposed modifications in the T-Mobile Ex Parte.<sup>24</sup> On July 7, 2010, APCO and NENA filed an *ex parte* letter stating that they do not object to the proposed modifications in the T-Mobile Ex Parte and urged the Commission to proceed

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<sup>16</sup> Comment Sought on Proposals Regarding Service Rules for Wireless Enhanced 911 Phase II Location Accuracy and Reliability, PS Docket No. 07-114, *Public Notice*, 23 FCC Rcd 13797 (PSHSB Sept. 22, 2008) (*Bureau Public Notice*).

<sup>17</sup> *Id.* at 2.

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> See Applications of Cellco Partnership d/b/a Verizon Wireless and Atlantis Holdings LLC, *Memorandum Opinion and Order and Declaratory Ruling*, 23 FCC Rcd. 17444, 17532-33 ¶¶ 198-201 (2008) (Verizon-ALLTEL Order); Sprint Nextel Corporation and Clearwire Corporation, *Memorandum Opinion and Order*, 23 FCC Rcd. 17570, 17612-14 ¶¶ 109-112 (2008) (Sprint-Clearwire Order).

<sup>21</sup> Public Safety and Homeland Security Bureau Seeks to Refresh the Record Regarding Service Rules for Wireless Enhanced 911 Phase II Location Accuracy and Reliability, PS Docket No. 07-114, *Public Notice*, 24 FCC Rcd 13677 (PSHSB 2009) (*Second Bureau Public Notice*).

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

<sup>23</sup> Letter from Thomas J. Sugrue, Vice President, Government Affairs, T-Mobile, to Marlene H. Dortch, Secretary, FCC, filed June 16, 2010 (T-Mobile Ex Parte).

<sup>24</sup> Letter from Rebecca Murphy Thompson, General Counsel, RCA, to Marlene H. Dortch, Secretary, FCC, filed June 30, 2010 (RCA June 30 Ex Parte).

expeditiously to implement the modified proposals.<sup>25</sup> On July 29, 2010, General Communication, Inc. (GCI) filed an *ex parte* letter including proposals with specific application to rural and regional providers.<sup>26</sup>

11. This Second Report and Order represents our next step in a comprehensive examination of E911 location accuracy and reliability. Taken together, the APCO, NENA, AT&T, Sprint, T-Mobile, and Verizon Wireless proposals reflect agreement among leading 911 stakeholders for new E911 accuracy requirements for both handset-based and network-based location technologies. In the context of our review of the entire record in this proceeding, we find that these consensus proposals from national public safety organizations and major industry representatives will provide public safety agencies with necessary information during emergencies, and benefit consumers, in a manner that is technologically achievable. Moreover, the timeframe for compliance and permitted exclusions will serve to minimize the economic impact on small carriers while retaining significant benefits for public safety.

### III. DISCUSSION

#### A. Compliance with Section 20.18(h) at the County Level or PSAP Level

12. The rule changes we are adopting today further our long-standing public safety and homeland security goals in this proceeding. First, they ensure that all stakeholders – including public safety entities, wireless carriers, technology providers, and the public – will benefit from an appropriate and consistent compliance methodology.<sup>27</sup> Second, by making clear that location accuracy compliance may not be achieved on an averaged basis over large geographical areas, the revised rules ensure that PSAPs receive meaningful, accurate location information from wireless 911 callers in order to dispatch local emergency responders to the correct location. As a direct result, the new rules will minimize potentially life-threatening delays that may ensue when first responders cannot be confident that they are receiving accurate location information.<sup>28</sup> As discussed below, major wireless carriers either already are subject to most elements of the *ex parte* proposals as a result of merger conditions, or indicate they can comply with the changed location accuracy requirements based on existing location technologies. These carriers also indicate that it is feasible for them to comply with our new requirement that they provide confidence and uncertainty data to PSAPs, which is widely supported by the public safety community. Also, as explained below, we provide for certain exclusions reflective of the technical limitations of existing location technologies. Furthermore, carriers facing unique circumstances may seek waiver relief based on certain factors.

13. As an initial matter, some commenters have urged the Commission to forego any rulemaking, advocating instead that the Commission establish an industry advisory group to draft new rules relating to location accuracy.<sup>29</sup> Further, some technology companies presented alternate views. For example, Polaris Wireless, Inc. (Polaris) states that the *ex parte* proposals maintain the status quo for handset-based carriers and “spark a migration to predominately handset-based technologies even for

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<sup>25</sup> Letter from Richard Mirgon, President, APCO, and Steve O’Conor, President, NENA, to Marlene H. Dortch, Secretary, FCC, filed July 7, 2010 (APCO/NENA July 7 Ex Parte).

<sup>26</sup> Letter from Christopher Nierman, Director, Federal Regulatory Affairs, General Communication Inc., to Marlene H. Dortch, Secretary, FCC, filed July 29, 2010 (GCI Ex Parte).

<sup>27</sup> See *First Report and Order* at 1 ¶ 2.

<sup>28</sup> See *id.* at 4 ¶ 9.

<sup>29</sup> See, e.g. Motorola Comments to *Bureau Public Notice* at 4; NTCA Comments to *Bureau Public Notice* at 2-3; Nokia Comments to *Bureau Public Notice* at 2; USCC Reply Comments to *Bureau Public Notice* at 3.

network-based carriers.”<sup>30</sup> Therefore, Polaris argues that “this proposed framework will not drive the adoption of the best E911 Phase II technologies available today, such as hybrid systems, nor will it achieve the greatest or fastest possible outcome for the American public.”<sup>31</sup> S5 Wireless, Inc. (S5) “believes it is currently possible to implement newer technologies, such as that which S5 offers, and easily achieve the Commission’s accuracy standards.”<sup>32</sup>

14. We decline to delay taking Commission action, because of the importance to public safety of minimizing the potentially life-threatening delays that may ensue when first responders cannot be confident that they are receiving accurate location information. Further, while other technologies may hold promise for enhanced location accuracy, we find that acting now to adopt clear new geographic requirements based on the existing location accuracy calculations is the best course for the near-term. In our companion proceeding adopted today, we explore how differing technology approaches may improve wireless location accuracy going forward.

15. *Comments.* A number of commenters generally support requiring compliance with section 20.18(h) at the county or PSAP-level.<sup>33</sup> However, a few commenters held opposing views. Corr Wireless Communications, LLC (Corr) advocates using the Metropolitan Statistical Area as a “more useful measuring stick for this kind of service.”<sup>34</sup> Corr, however, indicates that it would support a county-based metric provided that the Commission “make an exception in its accuracy requirement to account for the impossibility or extreme difficulty in meeting that standard in rural areas.”<sup>35</sup> Furthermore, a number of commenters argue that complying with the county-level standard would be prohibitively expensive.<sup>36</sup> For example, the National Telecommunications Cooperative Association (NTCA) argues that “it is expected that the new standards will impose prohibitive costs on many rural wireless carriers, if compliance is even possible.”<sup>37</sup> The Rural Telecommunications Group (RTG), citing to its August 20, 2007 comments, notes that rural carriers “may need to construct an extraordinary number of additional antenna sites,” and that, “[w]ith fewer customers than large carriers serving urban areas, RTG members and other rural wireless carriers are unable to recover the substantial cost of constructing a large number

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<sup>30</sup> Polaris Comments to *Bureau Public Notice* at 4.

<sup>31</sup> Polaris Comments to *Second Bureau Public Notice* at 4.

<sup>32</sup> S5 Comments to *Second Bureau Public Notice* at 2.

<sup>33</sup> AT&T Comments to *Bureau Public Notice* at 3; AT&T Comments to *Second Bureau Public Notice* at 1; Nokia Comments to *Bureau Public Notice* at 2; Sprint Nextel Comments to *Bureau Public Notice* at 2; Sprint Nextel Comments to *Second Bureau Public Notice* at 3; Corr Comments to *Bureau Public Notice* at 1; Motorola Comments to *Bureau Public Notice* at 1; Verizon Comments to *Bureau Public Notice* at 2; Verizon Comments to *Second Bureau Public Notice* at 5; RCC Comments to *Bureau Public Notice* at 1 (filed Oct. 9, 2008); USCC Reply Comments to *Bureau Public Notice* at 1; APCO Pennsylvania Chapter Comments to *Second Bureau Public Notice* at 1; NENA Comments to *Second Bureau Public Notice* at 7; L. Robert Kimball and Associates Comments to *Second Bureau Public Notice* at 1.

<sup>34</sup> Corr Wireless Comments to *Bureau Public Notice* at 2.

<sup>35</sup> *Id.* at 2-3.

<sup>36</sup> See e.g. NTCA Comments to *Bureau Public Notice* at 2; NTCA Reply Comments to *Second Bureau Public Notice* at 2; Blooston Rural Carriers Comments to *Bureau Public Notice* at 2; Blooston Rural Carriers Reply Comments to *Second Bureau Public Notice* at 2; SouthernLINC Reply Comments to *Second Bureau Public Notice* at 4; RTG Comments to *Bureau Public Notice* at 3, Andrews LLC Comments to *Bureau Public Notice* at 2 (citing Andrews LLC August 2007 Comments); Nokia Reply Comments to *Bureau Public Notice* at 2.

<sup>37</sup> NTCA Comments to *Bureau Public Notice* at 2.

of additional cell sites solely to triangulate location data.”<sup>38</sup> GCI argues that the county-based metric does “not take into account the technological and economic realities of providing service to low-density, topographically challenged service areas, like Alaska,” adding that “strict adherence to th[e] proposed metrics [w]ould have the perverse result of stifling deployments to areas most in need of wireless infrastructure investment.”<sup>39</sup> NENA and APCO favor “a waiver process to the wholesale ‘exceptions’ for rural carriers proposed by Corr Wireless which would essentially only require Phase I in many parts of the country.”<sup>40</sup>

16. *Discussion.* Based on the complete record in this proceeding, we revise the wireless location accuracy rules to require county-level or PSAP-level compliance. We agree with APCO and NENA and find that requiring compliance at the county level reflects recent consolidation efforts by PSAPs to mirror county boundaries.<sup>41</sup> In addition, we agree that counties “are more easily defined than PSAPs and are not prone to administrative boundary changes.”<sup>42</sup> We find that compliance at the county level can be achieved with currently available technology, particularly in conjunction with the revisions we make to section 20.18(h) discussed below, including the permitted exclusions. Accordingly, we find that a county-level compliance standard provides an appropriate, consistent, and achievable compliance methodology with respect to wireless location accuracy standards. We conclude that a county-level compliance standard will ensure that PSAPs receive accurate and meaningful location information in most cases. Moreover, nothing in the record persuades us that such costs will be prohibitive for participating wireless carriers, including smaller carriers. The commenters expressing these concerns provide no quantification of the cost of meeting these requirements. As discussed below, however, we afford certain exclusions and note that financial considerations, among others, will be taken into account should a service provider request waiver relief.

17. We also find that there continues to be merit in a PSAP service area-based compliance standard. As APCO and NENA indicate, “county-level accuracy would in many cases be identical to PSAP-level accuracy.”<sup>43</sup> In many areas, PSAP service areas are coterminous with county boundaries. Where PSAP service areas are larger than counties, however, providing location accuracy at the PSAP level would be beneficial to the public safety community since the reported accuracy would match the exact boundary of the PSAP’s service area. Conversely, where PSAPs are smaller than counties, providing location accuracy information at the PSAP level could be of even more value to the PSAP and the public safety community since the information would be provided on a more granular basis than that achieved at the larger county level. Various public safety organizations continue to express support for PSAP-level compliance in comments filed with the Commission.<sup>44</sup>

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<sup>38</sup> RTG Comments to *Bureau Public Notice*, attaching and incorporating by reference RTG Comments to *Notice at 4-5* (filed Aug. 20, 2007 in response to *Notice*, Part III.B).

<sup>39</sup> GCI Comments to *Second Bureau Public Notice at 3-4*.

<sup>40</sup> NENA/APCO Reply Comments to *Bureau Public Notice at 5*.

<sup>41</sup> See APCO/NENA July 14 Ex Parte at 1.

<sup>42</sup> APCO/NENA Sept. 9 Ex Parte at 1.

<sup>43</sup> *Id.*

<sup>44</sup> See Johnson County Comments to *Bureau Public Notice at 2*; Lufkin Police Department Comments to *Bureau Public Notice at 1*; New York City Police Comments to *Bureau Public Notice at 2-3*; Onandaga County Comments to *Bureau Public Notice at 2*; Orange County Comments to *Bureau Public Notice at 2*; San Juan County Comments to *Bureau Public Notice at 2*; Syosset Fire District Comments to *Bureau Public Notice at 3*; Texas 9-1-1 Alliance Comments to *Bureau Public Notice at 2*; Waukesha County Comments to *Bureau Public Notice at 2*; City of Wichita Falls Comments to *Bureau Public Notice at 2*; WSCDC Comments to *Bureau Public Notice at 2* (all continued....)

18. We therefore find that both PSAP-level compliance and county-level compliance are beneficial towards meeting the needs of PSAPs and public safety first responders, and we will allow carriers to choose which standard better meets their needs. Such an approach will permit carriers to analyze carrier-specific factors like natural and network topographies (for example, foliage levels, terrain characteristics, cell site density, overall system technology requirements, etc.) while, in either case, ensuring that public safety responders receive timely and accurate location information.

**B. Handset-Based Location Technologies**

19. On August 20, 2008, NENA, APCO, and Verizon Wireless filed a joint proposal for “compliance measurements for handset-based technologies.”<sup>45</sup> Specifically, they propose the following new rules:

Two years after the Commission adopts new rules, on a county-by-county basis, 67% of Phase II calls must be accurate to within 50 meters in all counties; 80% of Phase II calls must be accurate to within 150 meters in all counties, provided, however, that a carrier may exclude up to 15% of counties from the 150 meter requirement based upon heavy forestation that limits handset-based technology accuracy in those counties.

Eight years after the Commission adopts new rules, on a county-by-county basis, 67% of Phase II calls must be accurate to within 50 meters in all counties; 90% of Phase II calls must be accurate to within 150 meters in all counties, provided, however, that a carrier may exclude up to 15% of counties from the 150 meter requirement based upon heavy forestation that limits handset-based technology accuracy in those counties.<sup>46</sup>

20. Verizon Wireless explains that, “the greatest technical barrier to the accuracy of handset-based E911 technologies is the presence of terrain obstructions, whether natural or manmade... Where, for example, an area’s topology is characterized by forest, the likelihood of a good location fix is reduced because the tree cover obstructs the transmission path between the satellites and the handset. The more extensive the tree cover, the greater the difficulty the system has in generating a GPS-based fix.”<sup>47</sup> To that end, Verizon Wireless states that its joint proposal with NENA and APCO compensates for these “technical realities.”<sup>48</sup>

21. The parties also pledged “to convene, within 180 days of the Commission’s order, an industry group to evaluate methodologies for assessing wireless 9-1-1 location accuracy for calls originating indoors and report back to the Commission within one year.”<sup>49</sup> On August 21, 2008, Sprint submitted a letter in support of the NENA, APCO, and Verizon Wireless proposal, stating:

The proposed accuracy standard meets the concerns of public safety while acknowledging the limitations of current technology. Although setting the accuracy standard at the county level will impose significant testing costs and require substantial time to complete, the accuracy standards

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supporting PSAP-level compliance with Section 20.18(h)). *See also* St. Tammany Parish Communications District Comments to *Bureau Public Notice* at 1 (although PSAP-level compliance is preferred, accuracy testing should be done at a level no larger than county/parish boundaries).

<sup>45</sup> NENA/APCO/Verizon Aug. 20 Ex Parte at 1.

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

<sup>47</sup> Letter from John T. Scott, III, Vice President and Deputy General Counsel – Regulatory Law, Verizon Wireless, to Marlene H. Dortch, Secretary, FCC, filed Sept. 5, 2008, at 1-2 (Verizon Sept. 5 Ex Parte).

<sup>48</sup> *See id.* at 2.

<sup>49</sup> NENA/APCO/Verizon Aug. 20 Ex Parte at 2.

articulated should be achievable. Sprint commends all those involved in the work required to produce this proposal and urges the Commission to adopt this compromise.<sup>50</sup>

22. As mentioned above, the Commission previously adopted two Orders approving applications for transfers of control, involving Verizon and ALLTEL Corporation and Sprint Nextel and Clearwire Corporation, conditioned upon their voluntary agreements to abide by the conditions set forth in their respective *ex parte* letters, which are identical to the wireless E911 proposals they submitted in this proceeding.<sup>51</sup>

23. *Comments.* Sprint Nextel, a handset-based carrier, continues to support the NENA, APCO, and Verizon Wireless proposal. Sprint Nextel views these benchmarks as “furthering the goals of public safety; both by holding carriers to a higher standard and by ensuring that carriers are optimizing their networks at the local level.”<sup>52</sup> Sprint Nextel adds that, “one of the significant benefits of the compromise will be the extensive testing required at the local level.”<sup>53</sup> Sprint Nextel notes that “[t]o date the Commission has adopted new accuracy requirements for two wireless carriers, Sprint and Verizon Wireless” and the Commission should therefore “work toward developing regulations to apply to the industry as a whole.”<sup>54</sup> NTELOS, however, expresses “concerns that any new testing and reporting requirements would be burdensome since we are a small, regional carrier and do not have the expertise within the company to accomplish this task.”<sup>55</sup> NTELOS notes that it “depends heavily on outside vendors for support in our accuracy testing,” and “the unknown cost of reporting requirements that would accompany any rule change could have significant repercussions for smaller carriers.”<sup>56</sup> RCA states that “as currently proposed, the [handset based] location accuracy standards provided by Verizon Wireless and public safety groups are not technically and economically feasible for the Tier II and Tier III carriers that RCA represents. Tier II carriers will need at least an additional six months after the effective date of any new rules to meet the 67%/80% requirement proposed by Verizon Wireless. Tier III carriers will need at least an additional 12 months.”<sup>57</sup> SouthernLINC Wireless (SouthernLINC) maintains that the proposals “fail to give any consideration to the circumstances and operational realities faced by the nation’s smaller regional and rural wireless carriers.”<sup>58</sup> SouthernLINC therefore argues for the “adoption of alternative benchmarks for small and mid-size Tier II and Tier III carriers,”<sup>59</sup> and proposes its own benchmarks in order to “provide Tier II and Tier III carriers sufficient time to implement the measures necessary to conduct county-level testing.”<sup>60</sup> Finally, SouthernLINC notes that “for regional and rural carriers, the impact of any new location accuracy requirements is an issue of both the cost of acquiring and deploying

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<sup>50</sup> Sprint Nextel Aug. 21 Ex Parte at 1.

<sup>51</sup> See Verizon-ALLTEL Order at ¶¶ 198-201; Sprint-Clearwire Order at ¶¶ 109-112.

<sup>52</sup> Letter from Charles W. McKee, Director, Governmental Affairs, Sprint Nextel Corporation, to Marlene Dortch, Secretary, FCC, filed Sept. 24, 2008 at 2 (Sprint Nextel Sept. 24 Ex Parte).

<sup>53</sup> *Id.*

<sup>54</sup> Sprint Nextel Comments to *Second Bureau Public Notice* at 5.

<sup>55</sup> NTELOS Comments to *Bureau Public Notice* at 1.

<sup>56</sup> *Id.*

<sup>57</sup> RCA Reply Comments to *Bureau Public Notice* at 2-3.

<sup>58</sup> SouthernLINC Reply Comments to *Second Bureau Public Notice* at 4.

<sup>59</sup> SouthernLINC Reply Comments to *Bureau Public Notice* at 12.

<sup>60</sup> *Id.* at 13-14.

additional technology...and the cost of conducting statistically valid testing on a county-by-county basis to determine accuracy at the county level.”<sup>61</sup>

24. Specifically with respect to the parties’ proposal to exclude fifteen percent of counties based upon heavy forestation, Sprint Nextel argues that the exclusion “acknowledges the technical limitations of current technology and does not penalize carriers for those exceptionally challenging cases.”<sup>62</sup> However, Motorola suggests rather than excluding 15 percent of counties based on forestation, the Commission should adopt AT&T’s requirement for network-based location technologies and allow 85 percent compliance at the final benchmark.<sup>63</sup> Motorola argues that “doing so would provide carriers the flexibility for exclusions based not only on forestation, but also other situations such as urban canyons and urban/rural buildouts that limit handset-based technology accuracy.”<sup>64</sup> RCA argues that “the percentage of counties that can be excluded from the 150 meter requirement based upon ‘heavy forestation’ should be raised to twenty-five percent for purposes of meeting the 67%/80% requirement and twenty percent for the proposed 67%/90% requirement,”<sup>65</sup> and the Commission “should...make clear that the [‘heavy forestation’] exception includes all terrain obstructions.”<sup>66</sup> United States Cellular Corp. (USCC) states that, “[t]o date, neither APCO, NENA nor Verizon Wireless have explained the rationale for setting the exclusion limit at 15 percent nor have they explained why this exclusion only applies in counties with heavy forestation.”<sup>67</sup> SouthernLINC recommends that the term “heavy forestation” be “changed to ‘challenging environment’ in order to clarify the nature of the of the 15-percent exclusion and avoid any confusion as to the exclusion’s applicability.”<sup>68</sup> Verizon Wireless “supports an industry-wide rule that permits any carrier employing a handset-based solution (including Verizon Wireless) to exclude up to 15 percent of counties for any reason, not solely because of ‘heavy forestation.’”<sup>69</sup> APCO and NENA disagree with including other terrain obstructions into the fifteen percent exception, arguing that this “would be unacceptable as it could lead to the exclusion of large metropolitan counties.”<sup>70</sup> Rather, they state that they wish to restrict the exception only to forestation “on the expectation that it would apply in most cases to very sparsely populated counties.”<sup>71</sup> APCO and NENA also noted that “a

<sup>61</sup> *Id.* at 6.

<sup>62</sup> Letter from Charles W. McKee, Director, Governmental Affairs, Sprint Nextel Corporation, to Marlene Dortch, Secretary, FCC, filed Sept. 24, 2008 at 2.

<sup>63</sup> See Motorola Comments to *Bureau Public Notice* at 3.

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

<sup>65</sup> RCA Reply Comments to *Bureau Public Notice* at 2-3.

<sup>66</sup> *Id.* at 5. See also Motorola Reply Comments to *Bureau Public Notice* at 2; T-Mobile Reply Comments to *Bureau Public Notice* at 14.

<sup>67</sup> USCC Reply Comments to *Bureau Public Notice* at 3.

<sup>68</sup> SouthernLINC Reply Comments to *Bureau Public Notice* at 21.

<sup>69</sup> Letter from Tamara Preiss, Vice President, Federal Regulatory Affairs, Verizon Wireless, to Marlene Dortch, Secretary, FCC, filed Sept. 13, 2010 at 2. Subsequently, Verizon “expressed support for generally applicable E-911 rules consistent with technical feasibility and competitive neutrality,” citing as one example “the different treatment of network-based and handset-based carriers with respect to the exclusion of up to 15 percent of counties.” Letter from Tamara Preiss, Vice President, Federal Regulatory Affairs, Verizon Wireless, to Marlene Dortch, Secretary, FCC, filed Sept. 16, 2010 at 1.

<sup>70</sup> Letter from Robert M. Gurss, Director, Legal and Governmental Affairs, APCO, and Brian Fontes, Chief Executive Officer, NENA, to Marlene Dortch, Secretary, FCC, filed Oct. 17, 2008.

<sup>71</sup> *Id.*

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broader exclusion could lead to substantial areas receiving substandard location accuracy for E911 calls.<sup>72</sup>

25. *Discussion.* We find that the consensus plan, based on the agreement of important E911 stakeholders, comprehensively addresses location accuracy criteria in connection with handset-based location technology. These proposals ensure that carriers using handset-based location technologies are subject to appropriate and consistent compliance methodology that may not be based on averaging over large geographical areas. Additionally, we believe that the important public safety issues at stake outweigh the potential cost impact of imposing these regulations. As we previously noted, SouthernLINC argues that the regulations would impose a significant strain on smaller carriers; however, SouthernLINC does not provide a quantification of the cost of meeting these requirements. Moreover, as discussed below, financial considerations, among others, will be taken into account should a service provider request waiver relief. Further, we conclude that the proposed compliance timeframes, limitations, and exemptions will provide carriers with a sufficient measure of flexibility to account for technical and cost-related concerns. Indeed, the approximately two year's passage of time since carriers first had an opportunity to raise concerns about the timing of the benchmarks negates the request of some carriers to extend the benchmarks for up to an additional year. Further, the rule changes we adopt today effectively relax the existing handset-based requirements by immediately reducing, for two years after the effective date, the 150 meter requirement from 95 percent of all calls to 80 percent of all calls. Moreover, even after eight years, the 150 meter requirement rises only to 90 percent.

26. The proposals also represent an acknowledgement by the public safety and commercial communities that they can address the critical need to provide public safety agencies with meaningful information in the event of an emergency in a technically achievable manner. The voluntary commitments to abide by the same proposals by Verizon, with respect to its transaction with ALLTEL (a Tier II wireless carrier), and Sprint, with respect to Clearwire, is further evidence of the flexibility and feasibility afforded by these criteria to enable carriers to meet these criteria even in the context of significant transactions. Thus, we require wireless licensees subject to section 20.18(h) of the Commission's rules who use handset-based location technology to satisfy these standards either at a county-based geographic level or at the PSAP service area level.

27. Because of the geographical and topographical differences that characterize different counties and PSAP service areas, we find that we should permit carriers using handset-based location technology to exclude up to 15 percent of counties or PSAP service areas from the 150 meter requirement based upon heavy forestation, consistent with the *ex parte* proposals. In this regard, we agree with NENA and APCO that any expansion of this exclusion, whether to an increased percentage or based on factors in addition to forestation, would excuse compliance to an unacceptable level of risk to public safety. We find that among the challenges faced by handset-based technologies, forestation is a substantial contributor and that other terrain issues typically would overlap with forestation concerns. Therefore, we expect that many of these other terrain issues will be addressed through the forestation exclusion. The more open-ended approach advocated by commenters may lead to overuse or abuse of exceptions and potentially harm public safety. The waiver process is thus much more suitable to address individual or unique problems, where we can analyze the particular circumstances and the potential impact to public safety. Some commenters recommended specific criteria for Tier III carrier waivers.<sup>73</sup> We address waiver requests in more detail below.

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<sup>72</sup> Letter from Robert M. Gurss, Regulatory Counsel, APCO, and Brian Fontes, CEO, NENA, to Marlene Dortch, Secretary, FCC, filed Sept. 15, 2010 at 1.

<sup>73</sup> See e.g. SouthernLINC Reply Comments to *Bureau Public Notice* at 15-16; SouthernLINC Reply Comments to *Second Bureau Public Notice* at 7.

28. In order to ensure that the public safety community and the general public are aware of these instances where carriers cannot meet the Phase II location accuracy requirements, and prevent overuse of this exclusion, we will require carriers to file a list of those specific counties or PSAP service areas where they are utilizing this exclusion, within ninety days following approval from the Office of Management and Budget (OMB) for the related information collection. This list must be submitted electronically into the docket of this proceeding, and copies sent to NENA, APCO, and the National Association of State 9-1-1 Administrators (NASNA) in paper or electronic form. Further, carriers must submit in the same manner any changes to their exclusion lists within thirty days of discovering such changes.<sup>74</sup> We find that permitting this exclusion, subject to these reporting requirements, properly but narrowly accounts for the known technical limitations of handset-based location accuracy technologies, while ensuring that the public safety community and the public at large are sufficiently informed of these limitations. We expect that carriers failing to meet any particular benchmark will promptly inform the Commission and submit an appropriately supported waiver request. Further, we will monitor progress at each benchmark and may request status information if necessary.

29. We also encourage the parties to meet as a group to evaluate methodologies for assessing wireless 911 location accuracy for indoor calls.<sup>75</sup> Because indoor use poses unique obstacles to handset-based location technologies, and in light of the expressed interest of both the public safety and commercial wireless communities to further explore this issue, we clarify that these standards apply to outdoor measurements only. Further, we are seeking comment in our companion FNPRM/NOI on how best to provide automatic location identification (ALI) in technically challenging environments, including indoors.

### C. Network-Based Location Technologies

30. On August 25, 2008, NENA, APCO, and AT&T submitted an *ex parte* letter proposing new compliance measurements specifically addressing network-based technologies.<sup>76</sup> NENA, APCO, and AT&T initially explain their proposal as follows:

As network-based providers will be unable to meet the new proposed county-level accuracy standards in all areas relying solely upon current network-based technology solutions, carriers who employ network-based location solutions may be expected to deploy handset-based solutions as an overlay to existing network-based solutions in order to meet the more stringent county-level requirements set forth below. To encourage the improvements in location accuracy that may be achieved using both network and handset based solutions, this proposal provides that network-based carriers may elect to use a system of blended reporting for accuracy measurements, as defined below. Carriers also may elect to report accuracy in any county based solely on the handset-based accuracy standards.<sup>77</sup>

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<sup>74</sup> Cf. 47 C.F.R. § 1.65 (requiring applicants to furnish additional or corrected information within thirty days).

<sup>75</sup> Intrado suggests that indoor calls not be treated separately from the location accuracy standards that we adopt here. See Intrado Comments to *Bureau Public Notice* at 1-2 (asserting that, for example, “distinctions such as ‘outdoor use case’ [and] ‘indoor use case’ . . . should not be as though each exists in a vacuum”). Although Intrado indicates an “upward trend” in 911 indoor calls from wireless devices, we believe that addressing indoor calls here is not pertinent to the proposals on which we sought comment in the *Bureau Public Notice*. See Intrado Comments to *Bureau Public Notice* at 5-6. We defer considering this issue as the parties continue to evaluate methodologies and until we consider the other location accuracy issues that are within the scope of Part III. B of the *Notice*.

<sup>76</sup> APCO/NENA/AT&T Aug. 25 Ex Parte.

<sup>77</sup> *Id.* at 1-2.

31. The parties next propose the following as the accuracy standards for network-based carriers:

67%/100M: 67 percent of all calls, measured at the county level, shall be located within 100 meters in each county by the end of year 5, in accordance with the interim benchmarks below; and

90%/300M: 90 percent of all calls, measured at the county level, shall be located within 300 meters in 85 percent of all counties by the end of year 8, in accordance with the interim benchmarks below.<sup>78</sup>

32. In complying with the above, the parties provide the following limitation:

The county-level location accuracy standards will be applicable to those counties, on an individual basis, for which a network-based carrier has deployed Phase II in at least one cell site located within a county's boundary. Compliance with the 67 percent standard and compliance with the 90 percent standard in a given county shall be measured and reported independently (*i.e.* the list of compliant counties for the 67 percent standard may be different than for the 90 percent standard).<sup>79</sup>

33. Further, consistent with the opening explanation of their proposal, the parties propose employing a "blended" approach for meeting the above accuracy standards. Under this approach, carriers may take into account the impact of introducing "aGPS" (assisted GPS) handsets into their customer bases. Specifically, the parties state:

Accuracy data from both a network-based solution and a handset-based solution may be blended to meet the network-based standard. Such blending shall be based on weighting accuracy data in the ratio of aGPS handsets to non-aGPS handsets in the carrier's subscriber base. The weighting ratio shall be applied to the accuracy data from each solution and measured against the network-based standards.<sup>80</sup>

34. In their filing, the parties offer an example of blended reporting assuming 60% penetration of aGPS devices in the network. In effect, the result of this example is a "blended average" for each county that achieves better accuracy than a network-based approach alone would achieve.<sup>81</sup> AT&T states that environmental factors can "render the achievement of the current network-based location standards infeasible at the county level."<sup>82</sup> However, AT&T suggests that "these challenges can be mitigated or overcome through the deployment of aGPS technology."<sup>83</sup> AT&T concludes, "[a]ccordingly, using both network-based and handset-based E911 technologies in concert will allow all carriers over time to significantly improve E911 accuracy performance across the majority of service areas."<sup>84</sup>

35. The NENA, APCO, and AT&T proposal also sets the following network-based solution compliance benchmarks:

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<sup>78</sup> *Id.* at 2.

<sup>79</sup> *Id.*

<sup>80</sup> *Id.*

<sup>81</sup> *See id.*

<sup>82</sup> AT&T Sept. 5 Ex Parte at 2.

<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

36. First, for the 67%/100 meter standard:

End of Year 1<sup>85</sup>: Carriers shall comply in 60% of counties, which counties shall cover at least 70% of the POPs covered by the carrier, network-wide. Compliance will be measured on a per county basis using existing network-based accuracy data.

End of Year 3: Carriers shall comply in 70% of counties, which counties shall cover at least 80% of the POPs covered by the carrier, network-wide. Compliance will be measured on a per county basis, using, at the carrier's election, either (i) network-based accuracy data; or (ii) blended reporting.

End of Year 5: Carriers shall comply in 100% of counties. Compliance will be measured on a per county basis, using, at the carrier's election, either: (i) network-based accuracy data; (ii) blended reporting; or (iii) subject to the following caveat, solely handset-based accuracy data (at handset-based accuracy standards).<sup>86</sup>

A carrier may rely solely on handset-based accuracy data in any county if at least 95% of its subscribers, network-wide, use an aGPS handset, or if it offers subscribers in that county who do not have an aGPS device an aGPS handset at no cost to the subscriber.<sup>87</sup>

37. Second, for the 90%/300 meter standard:

End of Year 3: Carriers shall comply in 60% of counties, which counties shall cover at least 70% of the POPs covered by the carrier, network-wide. Compliance will be measured on a per county basis using, at the carrier's election, either: (i) network-based accuracy data; or (ii) blended reporting.

End of Year 5: Carriers shall comply in 70% of counties, which counties shall cover at least 80% of the POPs covered by the carrier, network-wide. Compliance will be measured on a per county basis using, at the carrier's election, either (i) network-based accuracy data; or (ii) blended reporting.

End of Year 8: Carriers shall comply in 85% of counties. Compliance will be measured on a per county basis using, at the carrier's election, either: (i) network-based accuracy data; (ii) blended reporting; or (iii) subject to the caveat above, solely handset-based accuracy data (at handset-based accuracy standards).<sup>88</sup>

38. Further, similar to the NENA, APCO, and Verizon Wireless proposal regarding stakeholder efforts to address location accuracy for wireless calls originating indoors, APCO, NENA, and AT&T propose the establishment of an E911 Technical Advisory Group (ETAG) that would “work with the E911 community to address open issues within this framework (*e.g.*, updated outdoor and indoor accuracy measurement methodologies, tactics for improving accuracy performance in challenged areas, testing of emerging technology claims, E911 responsibilities in an open-access environment, the development of hybrid network- A-GPS technologies, etc.).”<sup>89</sup> AT&T continues to support the creation of an ETAG and notes that “[t]he Commission has successfully leveraged such working groups in the past to

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<sup>85</sup> “Benchmarks intervals such as “Year 1” are to be measured from the effective date of any order adopting these proposed new location accuracy rules.” APCO/NENA/AT&T Aug. 25 Ex Parte at note 1.

<sup>86</sup> *Id.* at 2-3.

<sup>87</sup> *Id.* at 3.

<sup>88</sup> *Id.*

<sup>89</sup> *Id.*

drive policy forward, particularly in the public safety area, where the Commission's objectives are clear but the technical path forward requires further research and development before implementation is possible."<sup>90</sup>

39. *Comments.* In response to the *Bureau Public Notice*, T-Mobile and RCA argued that “[b]ecause as a practical matter a carrier must implement A-GPS and reach certain handset penetration levels in order to meet some of the proposed benchmarks, and because implementation of A-GPS for GSM carriers is directly tied to implementation of 3G service, several of the proposed benchmarks will not be technically and economically feasible for carriers other than AT&T unless these other carriers have a more nearly comparable period from the introduction of their own 3G services to meet the benchmarks.”<sup>91</sup> Specifically, T-Mobile and RCA advocated deferring the first benchmark by six months for Tier I and Tier II carriers and deferring the first benchmark by one year for Tier III carriers.<sup>92</sup> In addition, they argued that “[f]or T-Mobile, . . . the second, third and fourth benchmarks need to be delayed by at least two years in order for T-Mobile to have a timeline from 3G deployment similar [to] AT&Ts. For RCA members, the second, third, and fourth benchmarks need to be delayed further as their deployment of 3G services and AGPS handsets has not yet begun.”<sup>93</sup> Nokia agreed with this approach, arguing that it would “allow for a more technically and commercially feasible approach for all affected carriers, including carriers who are in initial stages of deploying 3G across their networks.”<sup>94</sup> RCA also noted that “Tier II and Tier III carriers do not necessarily have access to the same array or types of handsets . . . as Tier I carriers . . . due, in large part, to the growing use of exclusivity arrangements between the nation’s largest wireless carriers and handset manufacturers.”<sup>95</sup> NENA and APCO, however, noted that T-Mobile’s plan would “probably require more than seven years [to reach the third benchmark] as they would link the start-date to the deployment of A-GPS handsets.”<sup>96</sup> Moreover, NENA and APCO noted that variations among carriers in their deployment of next generation technologies “might be among the factors that could be considered in a waiver process.”<sup>97</sup> Further, AT&T argued that “[t]he flexibility built into the joint proposal . . . will enable carriers to meet the joint proposal’s ultimate requirements and interim benchmarks through a variety of means and incorporating the technologies that are best suited to their network and their particular deployment strategy . . . . Particularly in light of that flexibility, AT&T is confident that the APCO/NENA/AT&T joint proposal is technically feasible for carriers that currently rely on network-based solutions.”<sup>98</sup>

40. In response to the *Second Bureau Public Notice*, T-Mobile, RCA, and RTG maintained that upon revisiting their previously submitted proposal, “with the benefit of additional experience . . . it still may not be flexible enough to recognize reality.”<sup>99</sup> As such, T-Mobile, RCA, and RTG requested the Commission “simply to require that all 3G handsets manufactured in or imported into the United States

<sup>90</sup> AT&T Comments to *Second Bureau Public Notice* at 12.

<sup>91</sup> T-Mobile and RCA Comments to *Bureau Public Notice* at 3.

<sup>92</sup> *See id.* at 5.

<sup>93</sup> *Id.* at 3-4.

<sup>94</sup> Nokia Reply Comments to *Bureau Public Notice* at 3.

<sup>95</sup> RCA Reply Comments to *Bureau Public Notice* at 2-3.

<sup>96</sup> APCO/NENA Reply Comments to *Bureau Public Notice* at 4.

<sup>97</sup> *Id.* at 5.

<sup>98</sup> AT&T Reply Comments to *Bureau Public Notice* at 2.

<sup>99</sup> T-Mobile/RCA/RTG Comments to *Second Bureau Public Notice* at 7.

be A-GPS-capable after a date certain.”<sup>100</sup> T-Mobile, RCA, and RTG also requested the Commission to require “after an appropriate transition period, carriers [to] enable their entire network to be able to handle and to provide to PSAPs GPS-based location data from an A-GPS-capable handset, rather than locating these handsets using network-based technology.”<sup>101</sup> According to T-Mobile, RCA, and RTG, “[t]his handset requirement approach is simpler than the complex combinations of benchmarks and exclusions in virtually all of last year’s proposals, can be easily monitored and enforced, and would ultimately produce the best technically feasible results for these “hard-to-estimate” areas.”<sup>102</sup> The Blooston Rural Carriers supported the T-Mobile/RCA/RTG proposal and noted that “it would help move network-based carriers toward development of handset-based technology in a rapid but realistic timeframe.”<sup>103</sup> NTCA believes that the T-Mobile/RCA/RTG proposal “accomplishes the Commission’s objectives and makes sense for small carriers.”<sup>104</sup> NENA and APCO opposed the T-Mobile/RCA/RTG proposal, however, and “think the better answer is to establish a timeframe for compliance, reporting on efforts to meet elements of the timeframe and, where necessary, seek waivers based [on] current information and facts.”<sup>105</sup>

41. Corr Wireless proposes that the Commission “adopt the county-based metric but make an exception in its accuracy requirement to account for the impossibility or extreme difficulty of meeting that standard in a rural area.”<sup>106</sup> Specifically, Corr advocates that “in areas or counties where a network-solution carrier has fewer than four overlapping cell contours... only Phase I accuracy would be required.”<sup>107</sup> Corr argues that “this exception is likely to be temporary in nature since Corr agrees with AT&T that the deployment in the near future of ‘A-GPS’ technology will enable even network-solution carriers to achieve high levels of location accuracy.”<sup>108</sup> However, Corr also states that, “in order for small carriers like Corr to improve E911 accuracy through the deployment of advanced A-GPS handsets, they must have access to those handsets.”<sup>109</sup> Therefore, Corr argues that “the Commission should require handset manufacturers to make all handsets available on a non-discriminatory basis.”<sup>110</sup> T-Mobile disagrees, arguing that “this will not meaningfully accelerate deployment of A-GPS handsets. Carriers will already be driven by the benchmarks to incorporate A-GPS into their handsets... Thus Corr’s proposed mandate is duplicative and unnecessary.”<sup>111</sup> GCI Communications, in a later *ex parte*, proposes that “Tier III carriers in Alaska be required to measure compliance with the interim and final benchmarks only for those areas within a four-mile radius circle that includes at least five cell sites, where the test location within such circle has a usable signal level greater than -104 dBm to all cell sites within the

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<sup>100</sup> *Id.* at 8.

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

<sup>102</sup> *Id.*

<sup>103</sup> Blooston Rural Carriers Reply Comments to *Second Bureau Public Notice* at 2.

<sup>104</sup> NTCA Reply Comments to *Second Bureau Public Notice* at 2.

<sup>105</sup> NENA and APCO Reply Comments to *Second Bureau Public Notice* at 2.

<sup>106</sup> Corr Wireless Comments to *Bureau Public Notice* at 2-3.

<sup>107</sup> *Id.* at 3.

<sup>108</sup> *Id.*

<sup>109</sup> *Id.* at 4.

<sup>110</sup> *Id.*

<sup>111</sup> T-Mobile and RCA Reply Comments to *Bureau Public Notice* at 12.

circle.”<sup>112</sup> GCI Communications also notes that any new benchmarks applicable to network-based carriers should “at the very least exclude any geographic area designated for measurement (like county or borough) where fewer than three cell sites are deployed and any community, or part of a community, where at least three cell sites are not viewable to a handset.”<sup>113</sup> Finally, a number of commenters support the creation of an industry advisory group to further study and provide recommendations related to location accuracy.<sup>114</sup>

42. In a later filed *ex parte*, T-Mobile stated that it would agree to comply with the NENA/APCO/AT&T Aug. 25 Ex Parte for network-based carriers, with the following modifications.<sup>115</sup>

First, “[w]hen using network-based measurements as a component of the county-level compliance calculation (*i.e.*, if the carrier is using network-only measurements or blending network and A-GPS measurements),” the Commission should permit the carrier to “exclude that county if it has fewer than 3 cell sites.”<sup>116</sup>

Second, the Commission should “[p]ermit a carrier to use “blending” as well as “network-only” measurements at the first benchmark.”<sup>117</sup>

Third, the Commission should “[a]llow a carrier to comply with the Year 5 (third) benchmark using only handset-based measurements so long as it has achieved at least 85% (rather than 95%) AGPS handset penetration among its subscribers.”<sup>118</sup>

In response, RCA “expressed its support” for the exclusion of counties with less than three cell sites,<sup>119</sup> and APCO and NENA submitted a joint letter supporting T-Mobile’s modifications, and urging prompt resolution of this proceeding.<sup>120</sup>

43. *Discussion.* As with the county level location accuracy proposal received from handset-based carriers, we find that the NENA, APCO, and AT&T proposals, as modified by the T-Mobile Ex Parte, represent a consensus from important E911 stakeholders, which comprehensively addresses location accuracy criteria in connection with network-based technologies. We find that these proposals

<sup>112</sup> Letter from Tina Pidgeon, Vice-President, Federal Regulatory Affairs, and Brian M. Lowinger, Director, Federal Regulatory Affairs, GCI, to Marlene H. Dortch, Secretary, FCC, filed on December 9, 2008 at 2.

<sup>113</sup> GCI Comments to *Second Bureau Public Notice* at 5.

<sup>114</sup> See AT&T Comments to *Bureau Public Notice* at 4-5; AT&T Reply Comments to *Second Bureau Public Notice* at 4-5; Letter from Russell D. Lukas, Counsel for Rural Cellular Association, and Thomas Sugrue, Counsel for T-Mobile, to Marlene H. Dortch, Secretary, FCC, filed Sept. 19, 2008 at 2 (RCA/T-Mobile Ex Parte); Telecommunications Industry Association Comments to *Bureau Public Notice* at 2; Motorola Comments to *Bureau Public Notice* at 4; Alliance for Telecommunications Industry Solutions’ Emergency Services Interconnection Forum Comments to *Bureau Public Notice* at 1; NTCA Comments to *Bureau Public Notice* at 2-3; Nokia Comments to *Bureau Public Notice* at 2; SouthernLINC Reply Comments to *Bureau Public Notice* at 22-23; SouthernLINC Reply Comments to *Bureau Public Notice* at 9; CTIA Comments to *Second Bureau Public Notice* at 4; Rosum Corporation Reply Comments to *Second Bureau Public Notice* at 5-6.

<sup>115</sup> Letter from Thomas J. Sugrue, Vice President, Government Affairs, T-Mobile, Inc., to Marlene H. Dortch, Secretary, FCC, filed on June 16, 2010 (T-Mobile Ex Parte).

<sup>116</sup> T-Mobile Ex Parte at 2.

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

<sup>119</sup> RCA June 30 Ex Parte at 2.

<sup>120</sup> APCO/NENA July 7 Ex Parte.

ensure that carriers using network-based location technologies are subject to appropriate and consistent compliance methodology that no longer may be based on nationwide averaging. Also like the handset-based consensus, the proposals represent an acknowledgement by members of both the public safety and commercial communities that they can address the critical need to provide public safety agencies with meaningful information in the event of an emergency in a technically achievable manner. We reject earlier proposals by T-Mobile and RCA that would extend the compliance benchmarks. We agree with NENA and APCO, and find that extending the compliance benchmarks would disserve the important public safety goals of this proceeding. Consistent with the views of AT&T, we find that the proposed compliance timeframes, limitations, and exemptions will allow carriers a sufficient measure of flexibility to account for technical and cost-related concerns.

44. We also find that the T-Mobile Ex Parte includes modifications that are reasonable under the circumstances. First, in regard to T-Mobile's request to exclude counties with fewer than three cell sites, we note that it is not technically possible for a carrier to triangulate a caller's location with only one or two cell sites. Moreover, we are concerned that the absence of an appropriate exception may have the unintended consequence of carriers choosing to eliminate service where they are unable to triangulate position. In such circumstances, clearly the availability of wireless service to enable a caller to reach 911 in the first instance outweighs the potential lack of ALI capability, at least until blending of A-GPS-enabled handsets permits ALI. At the same time, we want to make sure that any exclusion we adopt is (1) not overly or unnecessarily employed, (2) specifically targeted to the inability, as a technical matter, to determine position through triangulation, and (3) time-limited, transparent, and regularly revisited. Simply focusing on a county-based exclusion may fail to account for all situations.<sup>121</sup> A county-based exclusion may be over-inclusive by failing to account for cell sites outside a county that can be used to triangulate. Some counties, boroughs, parishes, etc. may so large that, even though containing three or more cell sites, may still present technical challenges in achieving ALI.<sup>122</sup> This can occur when cell sites are configured to provide coverage to specific communities that are at great distances from each other, or where mountainous or other terrain features prohibit triangulation of cell sites that absent such features could permit triangulation. On the other hand, triangulation may be possible in only certain portions of a county, or due to the proximity of towers available in an adjacent county. All the while, the need for this exclusion specific to network-based location technologies should diminish over time as carriers blend A-GPS handsets into their customer base.

45. Accordingly, we will permit network-based carriers to exclude from compliance particular counties, or portions of counties, where triangulation is not technically possible, such as locations where at least three cell sites are not sufficiently visible to a handset. Similar to the 15 percent county exclusion we permit for handset-based carriers above, in order to ensure that the public safety community and the general public are aware of these instances where carriers cannot meet the Phase II location accuracy requirements, and prevent overuse of this exclusion, we will require carriers to file a list of those specific counties, or portions thereof, where they are utilizing this exclusion, within ninety days following approval from OMB for the related information collection. This list must be submitted electronically into the docket of this proceeding, and copies sent to NENA, APCO, and NASNA in paper or electronic form. Further, carriers must submit in the same manner any changes to their exclusion lists within thirty days of discovering such changes.<sup>123</sup>

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<sup>121</sup> See GCI Ex Parte at 3 ("Because of their vast size, most Alaska boroughs contain three or more sites; that is, at least three communities within the borough will be each served with a single site. The distance between communities requires that communications be carried via satellite link, such that mobile traffic between communities is not transmitted directly via cell sites.")

<sup>122</sup> For simplicity, we will refer to all counties, boroughs, parishes, and similar political boundaries as "counties."

<sup>123</sup> Cf. 47 C.F.R. § 1.65 (requiring applicants to furnish additional or corrected information within thirty days).

46. At the same time, we find it appropriate to place a time limit on this exclusion, because the need for this exclusion will diminish over time as network-based carriers incorporate A-GPS handsets into their subscriber bases. Accordingly, we will sunset this exclusion eight years after the effective date of this Order. Eight years following the effective date is the period of time by which the revised network-based requirements become fully effective. Network-based carriers that continue to lack the technical ability to triangulate position in certain areas upon the sunset date may seek extended relief from the Commission at that time. We find that permitting this exclusion, subject to the initial reporting requirement, the obligation to update the list of excluded areas, and the sunset period, properly but narrowly accounts for the known technical limitations of network-based location accuracy technologies, while ensuring that the public safety community and the public at large are sufficiently informed of these limitations.

47. T-Mobile also requests that the Commission “[p]ermit a carrier to use ‘blending’ as well as ‘network-only’ measurements at the first benchmark.”<sup>124</sup> We find that in terms of the blending element, there is no reason to differentiate among the compliance mechanisms for the three benchmarks. Thus, we will permit a carrier to blend accuracy data from both a network-based solution and a handset-based solution to meet the network-based standard at the first benchmark. Lastly, T-Mobile requests that the Commission “[a]llow a carrier the option to comply with the Year 5 (third) benchmark using only handset-based measurements so long as it has achieved at least 85% (rather than 95%) A-GPS handset penetration among its subscribers.”<sup>125</sup> We agree with T-Mobile that this approach “is more consistent with a phased transition to 95% A-GPS handset penetration over the entire 8-year period.”<sup>126</sup> We also note that without this modification, a carrier’s percentage of low-end customers could significantly affect its ability to meet the benchmarks. As T-Mobile and RCA point out, “[l]ow-end customers are less likely to move rapidly to the new 3G services and A-GPS handsets.”<sup>127</sup> Accordingly, we will permit a network-based carrier to comply with the third benchmark using only handset-based measurements, as long as it has achieved at least 85% A-GPS handset penetration among its subscribers.

48. Taking into consideration our goals for this proceeding and the entire record, we amend the network-based location accuracy rules consistent with the NENA, APCO and AT&T proposals, as modified by the T-Mobile Ex Parte, and as modified as discussed above with respect to the permitted exclusions where triangulation is not technically achievable. Accordingly, we require wireless licensees subject to Section 20.18(h) of the Commission’s rules using network-based location technology to satisfy these standards either at a county-based or PSAP-based geographic level. We clarify that these standards apply to outdoor measurements only. As described above, and modified by the T-Mobile Ex Parte, we will also allow accuracy data from both a network-based solution and a handset-based solution to be blended to meet the network-based standard. We agree with AT&T that allowing this type of blending can mitigate perceived challenges associated with providing accurate location identification in certain areas.<sup>128</sup> As before concerning the handset-based requirements, we expect that carriers failing to meet any particular benchmark will promptly inform the Commission and submit an appropriately supported waiver request. Further, we will monitor progress at each benchmark and may request status information if necessary.

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<sup>124</sup> T-Mobile Ex Parte at 2.

<sup>125</sup> *Id.*

<sup>126</sup> *Id.*

<sup>127</sup> T-Mobile and RCA Comments to *Bureau Public Notice* at 19.

<sup>128</sup> *See* AT&T Sept. 5 Ex Parte at 3.

49. Finally, as we previously noted, AT&T commits to creating an ETAG that would further examine related E911 issues. We encourage this effort, as well as Verizon's offer to convene an industry group to explore location accuracy for indoor calls as discussed above. Our companion FNPRM/NOI also seeks comment on these issues.

#### **D. Confidence and Uncertainty Data**

50. In the *Notice*, we tentatively concluded that carriers should automatically provide accuracy data to PSAPs.<sup>129</sup> We asked how and in what format that data should be transferred to each applicable PSAP.<sup>130</sup> We also asked how often it should be reported or provided and whether it should be provided as part of the call information/ALI.<sup>131</sup> Finally, we asked what the appropriate level of granularity for such accuracy data should be.<sup>132</sup>

51. NENA, APCO, and AT&T include in their *ex parte* submission a proposal with respect to the provision of confidence and uncertainty data to PSAPs. Specifically:

Confidence and uncertainty data shall be provided on a per call basis upon PSAP request. This requirement shall begin at the end of Year 2, to allow testing to establish baseline confidence and uncertainty levels at the county level. Once a carrier has established baseline confidence and uncertainty levels in a county, ongoing accuracy shall be monitored based on the trending of uncertainty data and additional testing shall not be required.<sup>133</sup>

52. This proposal is widely welcomed by the public safety community, as well as by representatives of industry. In its original request for declaratory ruling, APCO stated, “[r]egardless of the geographic area over which accuracy is measured, it is critical for PSAPs to know just how accurate the information is that they do receive.”<sup>134</sup> APCO later explained:

PSAPs need to know the level of E9-1-1 accuracy to facilitate appropriate dispatching of emergency responders. For example, responders need to know what to do if they arrive at the ‘wrong address’ or are unable to see the emergency upon arrival. If the call was delivered with a high degree of accuracy, the search for the actual emergency can be narrowed without requiring additional personnel. However, if the accuracy levels are actually low, then responders need to be prepared for a wider area search, and additional scarce resources may need to be dispatched.<sup>135</sup>

APCO and NENA also stress that providing confidence and uncertainty data on a per call basis “will greatly improve the ability of PSAPs to utilize accuracy data and manage their 9-1-1 calls.”<sup>136</sup> Industry representatives have similarly expressed the importance of confidence and uncertainty data. In this respect, we agree with AT&T that “the delivery of confidence and uncertainty data on a per-call basis will markedly improve 911 call takers’ ability to assess the validity of each call’s location information and deploy public safety resources accordingly.”<sup>137</sup> Sprint Nextel notes that “the uncertainty factor provides

<sup>129</sup> *Notice* at 10612 ¶ 16.

<sup>130</sup> *Id.*

<sup>131</sup> *Id.*

<sup>132</sup> *Id.*

<sup>133</sup> APCO/NENA/AT&T Aug. 25 Ex Parte at 4.

<sup>134</sup> APCO Request for Declaratory Ruling at 5.

<sup>135</sup> *Id.* at 5-6.

<sup>136</sup> APCO/NENA Sept. 9 Ex Parte.

<sup>137</sup> AT&T Sept. 5 Ex Parte at 3.

PSAPs with real time information about the quality of location calculation and removes the need to make their own assessment regarding the relative reliability of any particular fix.”<sup>138</sup>

53. *Comments.* AT&T argues that “wireless carriers are well positioned to develop and transmit C/U data, and our discussions with public safety organizations have made clear that, by enabling first responders to more accurately identify the relevant search data, the data can be very useful for PSAPs that are equipped to receive and utilize it.”<sup>139</sup> AT&T adds that “it is important that the C/U data delivered by carriers adhere to a single, common standard...AT&T and other carriers have reached consensus that uncertainty estimates will be provided by carriers at a confidence level corresponding to one standard deviation (‘one sigma’) from the mean” (or a confidence level of approximately 68 percent).<sup>140</sup> Sprint Nextel supports the proposal to transmit confidence and uncertainty data upon PSAP request, but states that this is dependent on LECs forwarding this data to PSAPs and that “the Commission must require owners of E911 networks to take the steps necessary to accommodate such data.”<sup>141</sup> AT&T likewise notes that, “for the data to provide value...the local exchange carrier must deliver that [confidence and uncertainty] data to the PSAP, and the PSAP must be equipped to receive and use it.”<sup>142</sup> Verizon states that “in some cases, the emergency services provider does not have the capability to transmit confidence and uncertainty information” and that the Commission should “require wireless carriers to include confidence and uncertainty information in the call location information they provide to the emergency services providers.”<sup>143</sup> NENA and APCO state that “[f]or those [System Service Providers] who do not pass uncertainty data to PSAPs, the burden should be on the SSP to demonstrate that they do not pass uncertainty data at the request of the PSAP or because of technical infeasibility, in which case a waiver may be warranted.”<sup>144</sup> However, Telecommunications Systems, Inc. states that the Commission should “reject the unspoken mandate to require extensive initial baseline ground truth testing and examine the benefits of using horizontal uncertainty as the initial and primary criteria for meeting location accuracy standards and the location information provided to PSAPs.”<sup>145</sup>

54. *Discussion.* Regardless of whether a carrier employs handset-based or network-based location technology, we require wireless carriers to provide confidence and uncertainty data on a per call basis upon PSAP request beginning at the end of year two. Although the NENA, APCO and AT&T proposal specifically applies to network-based location technologies, the record supports a finding that confidence and uncertainty data is useful for PSAPs in all cases, and that it is both technologically feasible and in the public interest to require both handset-based and network-based carriers to provide confidence and uncertainty data in the manner proposed. Further, as Telecommunications Systems, Inc. notes in its comments, implementation of its proposed alternative process would require “further cooperative study.”<sup>146</sup> We thus decline to adopt its proposal, but do not preclude future consideration.

<sup>138</sup> Sprint Nextel Comments to *Bureau Public Notice* at 16-17.

<sup>139</sup> AT&T Comments to *Bureau Public Notice* at 6.

<sup>140</sup> AT&T Reply Comments to *Bureau Public Notice* at 5.

<sup>141</sup> Sprint Nextel Comments to *Bureau Public Notice* at 6.

<sup>142</sup> AT&T Comments to *Bureau Public Notice* at 7. See also Verizon Comments to *Bureau Public Notice* at 5 (“in nearly all situations, wireless carriers route E911 information to the local exchange carrier that in turn relays the information to the PSAP”).

<sup>143</sup> Verizon Comments to *Bureau Public Notice* at 5.

<sup>144</sup> NENA/APCO Reply Comments to *Bureau Public Notice* at 2.

<sup>145</sup> Telecommunications Systems, Inc. Comments to *Bureau Public Notice* at 2.

<sup>146</sup> *Id.* at 4.

55. In addition, in light of the importance and usefulness of confidence and uncertainty data to public safety as demonstrated in the record, we take additional steps to ensure that the requirements we impose on wireless carriers are meaningful. Thus, to ensure that confidence and uncertainty data is made available to requesting PSAPs, we also require entities responsible for transporting this data between the wireless carriers and PSAPs, including LECs, CLECs, owners of E911 networks, and emergency service providers (collectively, System Service Providers (SSPs)), to implement any modifications to enable the transmission of confidence and uncertainty data provided by wireless carriers to the requesting PSAPs. Additionally, we agree with APCO and NENA that an SSP that does not pass confidence and uncertainty data to PSAPs must demonstrate in a request for waiver relief that it cannot pass this data to the PSAPs due to technical infeasibility.

#### **E. Waiver Requests**

56. Some commenters recommended specific criteria for Tier III carrier waivers.<sup>147</sup> We decline at this time to adopt any changes to the Commission's existing waiver criteria, which have been sufficient to date in addressing particular circumstances on a case-by-case basis and remain available to all carriers.<sup>148</sup> Further, we expect that the rule changes we adopt today should minimize the need for waiver relief. For handset-based carriers, we are permitting an exclusion of fifteen percent of counties due to heavy forestation and similar terrain features that impede the ability to obtain accurate location information. For network-based carriers, we are permitting exclusion of counties or portions of counties where cell site triangulation is not technically possible. In addition, the revised benchmarks are based on an eight-year compliance period, with the earliest benchmark not taking effect until one year following the effective date of this Order. Finally, we make clear that the revised location accuracy requirements do not apply to indoor use cases.

### **IV. PROCEDURAL MATTERS**

#### **A. Final Regulatory Flexibility Analysis**

57. As required by the Regulatory Flexibility Act (RFA),<sup>149</sup> an Initial Regulatory Flexibility Analysis (IRFA) was incorporated into the *Notice*.<sup>150</sup> The Commission sought written public comment on the possible significant economic impact on small entities regarding the proposals addressed in the *Notice*, including comments on the IRFA. Pursuant to the RFA, a Final Regulatory Flexibility Analysis is set forth in Appendix B.

#### **B. Paperwork Reduction Act of 1995 Analysis**

58. This document contains proposed new information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the OMB to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. § 3506(c)(4), we seek

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<sup>147</sup> *See e.g.* SouthernLINC Reply Comments to *Bureau Public Notice* at 15-16; SouthernLINC Reply Comments to *Second Bureau Public Notice* at 7.

<sup>148</sup> *See* Letter from Tamara Preiss, Vice President, Federal Regulatory Affairs, Verizon Wireless, to Marlene Dortch, Secretary, FCC, filed Sept. 16, 2010 at 2 (“[w]hether a carrier uses handset- or network-based Phase II technologies and regardless of size, each carrier should be afforded the same opportunity for waiver relief.”).

<sup>149</sup> *See* 5 U.S.C. § 603.

<sup>150</sup> *See Notice*, 22 FCC Rcd at 10619-32 (Appendix).

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specific comment on how we might “further reduce the information collection burden for small business concerns with fewer than 25 employees.”

**C. Congressional Review Act**

59. The Commission will send a copy of this Second Report and Order in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. § 801(a)(1)(A).

**D. Accessible Formats**

60. To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to [fcc504@fcc.gov](mailto:fcc504@fcc.gov) or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty). Contact the FCC to request reasonable accommodations for filing comments (accessible format documents, sign language interpreters, CARTS, *etc.*) by e-mail: [FCC504@fcc.gov](mailto:FCC504@fcc.gov); phone: (202) 418-0530 (voice), (202) 418-0432 (TTY).

**V. ORDERING CLAUSES**

61. Accordingly, IT IS ORDERED, pursuant to Sections 1, 4(i), and 332 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 332, that the Second Report and Order in PS Docket No. 07-114 IS ADOPTED, and that Part 20 of the Commission’s Rules, 47 C.F.R. Part 20, is amended as set forth in Appendix C. The Second Report and Order shall become effective 60 days after publication in the Federal Register, subject to OMB approval for new information collection requirements.

62. IT IS FURTHER ORDERED that the Request for Declaratory Ruling filed by APCO IS GRANTED IN PART AND DENIED IN PART to the extent indicated herein.

63. IT IS FURTHER ORDERED that the Commission’s Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Second Report and Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

## APPENDIX A

## List of Commenters to Notice and Bureau Public Notice

<b>Comments</b>	<b>Abbreviation</b>
Alliance for Telecommunications Industry Solutions	ATIS
Andrew LLC, a CommScope Company	Andrew LLC
Association of Public-Safety Communications Officials-International, Inc.	APCO
AT&T Inc.	AT&T
Blooston Rural Carriers	Blooston
Caddo Parish Communications District Number One	Caddo Parish
Cincinnati Bell Wireless LLC	Cincinnati Bell
City of Los Angeles	City of Los Angeles
City of Wichita Falls, Texas Police Department	City of Wichita Falls
Corr Wireless Communications, LLC	Corr
CTIA – The Wireless Association	CTIA
Independent Telephone and Telecommunications Alliance	ITTA
Intrado Inc.	Intrado
Johnson County, KS Emergency Communications	Johnson County
King County E911 Program	King County
Lufkin, Texas Police Department	Lufkin Police
The Mid-America Regional Council	MARC
Motorola, Inc.	Motorola
National Association of Telecommunications Officers and Advisors, National Association of Counties, National League of Cities, and U.S. Conference of Mayors	NATOA
National Emergency Number Association	NENA
National Telecommunications Cooperative Association	NTCA
New York City Police Department	NYPD
Nokia	Nokia
Nsighttel Wireless, LLC	NSighttel
nTelos	NTELOS
Office of United Communications, Washington, DC	OUC
Onondaga County Department of Emergency Communications	Onondaga County
Orange County 9-1-1 Administration, Florida	Orange County
Polaris Wireless, Inc.	Polaris
QUALCOMM Incorporated	QUALCOMM
RCC Consultants, Inc.	RCC
Rural Cellular Association	RCA
Rural Telecommunications Group	RTG
S5 Wireless, Inc.	S5
St. Tammany Parish Communications District	St. Tammany Parish
San Juan County Communications Authority, New Mexico	San Juan County
Sprint Nextel Corporation	Sprint Nextel
State of Montana Department of Administration, Information Technology Services Division	State of Montana

<b>Comments</b>	<b>Abbreviation</b>
Alliance for Telecommunications Industry Solutions	ATIS
Andrew LLC, a CommScope Company	Andrew LLC
State of New York Department of Public Service	New York DPS
State of Washington Enhanced 911 Program	Washington 911
SunCom Wireless, Inc.	SunCom
Syosset Fire District	Syosset Fire District
TechnoCom Corporation	TechnoCom
Telecommunications Industry Association	TIA
Telecommunications Systems, Inc.	Telecommunications Systems
The Texas 9-1-1 Alliance	Texas 9-1-1 Alliance
T-Mobile USA, Inc.	T-Mobile
TruePosition, Inc.	TruePosition
United States Cellular Corp.	USCC
Verizon Wireless	Verizon Wireless
Voice on the Net Coalition	VON Coalition
Walls, Carlton B.	Carlton Walls
Waukesha County, Wisconsin Department of Emergency Preparedness	Waukesha County
West Suburban Consolidated Dispatch Center	WSCDC
Wireless Communications Association International, Inc.	Wireless Communications Association International
Wireless Werx	Wireless Werx

### Reply Comments

<b>Replies</b>	<b>Abbreviation</b>
Association of Public-Safety Communications Officials-International, Inc.	APCO
AT&T Inc.	AT&T
GCI Communication Corp.	GCI
Motorola	Motorola
National Emergency Number Association	NENA
Nokia	Nokia
Polaris Wireless, Inc.	RCA
SouthernLINC	RCA
T-Mobile	RTG
SouthernLINC Wireless	SouthernLINC
Sprint Nextel	Sprint Nextel
TechnoCom Corporation	TechnoCom
T-Mobile USA, Inc.	T-Mobile
United States Cellular Corporation	USCC
Verizon Wireless	Verizon Wireless

**Ex Parte Comments**

<b>Ex Partes</b>	<b>Abbreviation</b>
Association of Public-Safety Communications Officials-International, Inc.	APCO
AT&T Inc.	AT&T
GCI Communications Corp	GCI
National Emergency Number Association	NENA
SouthernLINC Wireless	SouthernLINC
Sprint Nextel	Sprint Nextel
T-Mobile USA, Inc.	T-Mobile
Verizon Wireless	Verizon Wireless

**List of Commenters to *Second Bureau Public Notice***

<b>Comments</b>	<b>Abbreviation</b>
AT&T Inc.	AT&T
Blooston Rural Carriers	Blooston
CTIA – The Wireless Association	CTIA
GCI Communication Corp.	GCI
Intrado Inc.	Intrado
L. Robert Kimball and Associates	L. Robert Kimball
National Emergency Number Association	NENA
Pennsylvania Chapter, APCO	Pennsylvania Chapter, APCO
Polaris Wireless, Inc.	Polaris
Rural Cellular Association	RCA
Rural Telecommunications Group	RTG
S5 Wireless, Inc.	S5
Sprint Nextel Corporation	Sprint Nextel
Telecommunications Systems, Inc.	Telecommunications Systems
T-Mobile USA, Inc.	T-Mobile

**Reply Comments**

<b>Replies</b>	<b>Abbreviation</b>
Association of Public-Safety Communications Officials-International, Inc.	APCO
AT&T Inc.	AT&T
Blooston Rural Carriers	Blooston
EmFinders, Inc.	EmFinders
National Emergency Number Association	NENA
National Telecommunications Cooperative Association	NTCA
Polaris Wireless, Inc.	Polaris
Rosum Corporation	Rosum
Rural Cellular Association	RCA
Rural Telecommunications Group	RTG
SouthernLINC Wireless	SouthernLINC

Sprint Nextel	Sprint Nextel
T-Mobile USA, Inc.	T-Mobile
TruePosition, Inc.	TruePosition
Verizon Wireless	Verizon Wireless

**Ex Parte Comments**

<b>Ex Partes</b>	<b>Abbreviation</b>
Association of Public-Safety Communications Officials-International, Inc.	APCO
Andrew LLC, a CommScope Company	Andrew LLC
AT&T Inc.	AT&T
Comm Labs, Inc.	Comm Labs
GCI Communications Corp.	GCI
Intrado Inc.	Intrado
National Emergency Number Association	NENA
Polaris Wireless, Inc.	Polaris
Rural Cellular Association	RCA
SouthernLINC Wireless	SouthernLINC
Sprint Nextel	Sprint Nextel
T-Mobile USA, Inc.	T-Mobile
TruePosition, Inc.	TruePosition
Verizon Wireless	Verizon Wireless
Vonage Holdings Corp.	Vonage

## APPENDIX B

## Final Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA)<sup>151</sup> an Initial Regulatory Flexibility Analysis (IRFA) was included in the *Public Notice* in PS Docket No. 07-114 (*Notice*).<sup>152</sup> The Commission sought written public comment on the proposals in these dockets, including comment on the IRFA. This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.<sup>153</sup>

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

2. In the *Notice*, we sought comment on how to best ensure that public safety answering points (PSAPs) receive location information that is as accurate as possible for all wireless E911 calls. The objective was to ensure that PSAPs receive reliable and accurate location information irrespective of the location of the caller or the technology that may be used.

3. The Second Report and Order adopts rules to best ensure that public safety answering points (PSAPs) receive location information that is as accurate as possible for all wireless E911 calls. The Commission requires that Commercial Mobile Radio Service (CMRS) carriers comply with section 20.18(h) of the Commission's rules at the county-level or PSAP-level service area and adopts interim benchmarks to achieve this level of compliance. Specifically, the Order adopts rules requiring network-based technologies to provide location accuracy of 100 meters for 67 percent of calls in 60 percent of counties or PSAP service areas one year from the effective date of the Order; in 70 percent of counties or PSAP service areas three years from the Order; and in 100 percent of counties or PSAP service areas within five years of the effective date of the Order. Additionally, network-based technologies must meet the 300 meter/90 percent standard in 60 percent of counties or PSAP service areas within three years of the effective date of the Order; in 70 percent of counties or PSAP service areas within five years of the Order; and in 85 percent of counties or PSAP service areas within eight years of the Order. Accuracy data from both network-based solutions and handset-based technologies may be blended to measure compliance. Additionally, carriers are allowed to exclude particular counties, or portions of counties, where triangulation is not technically possible.

4. The Order also adopts rules requiring handset-based technologies to meet the 50 meters/67 percent standard and 150 meters/80 percent standard two years from the effective date of the Order, allowing carriers to exclude up to 15 percent of counties or PSAP areas from the 150 meter requirement based upon heavy forestation. Handset-based technologies must meet the 50 meters/67 percent standard and 150 meters/90 percent standard within eight years of the Order, allowing for 15 percent exclusions in heavily forested areas.

5. Finally, the Order adopts rules requiring carriers to provide confidence and uncertainty data on a per-call basis upon the request of a PSAP two years after the effective date of the Order.

**B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA**

6. RCA states that “[t]he Commission fails to comply with Regulatory Flexibility Act requirements in its IRFA...the Commission cannot point to any ‘small business alternatives’ that it has

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<sup>151</sup> See 5 U.S.C. § 603. The RFA, see 5 U.S.C. § 601 – 612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

<sup>152</sup> See Comment Sought on Proposals Regarding Service Rules for Wireless Enhanced 911 Phase II Location Accuracy and Reliability, PS Docket 07-114, *Public Notice*, 23 FCC Rcd 13797 (PSSB Sept. 22, 2008) (*Notice*).

<sup>153</sup> See 5 U.S.C. § 604.

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considered or that it has provided to commenters to consider in reaching its proposed approach.”<sup>154</sup>

7. SouthernLINC proposes certain “alternative approaches” that it states “alleviate any potential burdens on small entities.”<sup>155</sup>

8. GCI argues in an *ex parte* that, “because the adoption of the AT&T Proposal without adjustment will have a significant negative impact on Tier III carriers...the Commission must provide adjustments that respond to the challenges of these providers and the areas they serve.”<sup>156</sup>

9. No commenter provided a quantification of the cost of meeting the requirements adopted in this order. In response to the issues raised by public comments, we concluded that the proposed timeframes, limitations, and exemptions provided carriers, including small businesses, with a sufficient measure of flexibility to account for technical and cost-related concerns. The rule changes we have adopted effectively relax the existing handset-based requirements by immediately reducing, for two years after the effective date, the 150 meter requirement from 95 percent of all calls to 80 percent of all calls. Moreover, even after eight years, the 150 meter requirement rises only to 90 percent. Finally, financial considerations, among others, will be taken into account should a service provider request waiver relief. As noted in the Second Report and Order, in the event that small entities face unique circumstances that restrict their ability to comply with the Commission’s rules, these will be addressed through the waiver process. We have determined that the final rules adopt the best alternatives for promoting accurate location accuracy data.

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

10. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules.<sup>157</sup> The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”<sup>158</sup> In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.<sup>159</sup> A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).<sup>160</sup>

11. Nationwide, there are a total of approximately 22.4 million small businesses, according to SBA data.<sup>161</sup> A “small organization” is generally “any not-for-profit enterprise which is independently

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<sup>154</sup> RCA Reply Comments to Bureau Public Notice at 20-21.

<sup>155</sup> SouthernLINC Reply Comments to Bureau Public Notice at 11.

<sup>156</sup> Letter from Tina Pidgeon, Vice-President, Federal Regulatory Affairs, and Brian M. Lowinger, Director, Federal Regulatory Affairs, GCI Communications Corp., to Marlene H. Dortch, Secretary, FCC, filed on December 9, 2008 at 3.

<sup>157</sup> 5 U.S.C. §§ 603(b)(3), 604(a)(3).

<sup>158</sup> 5 U.S.C. § 601(6).

<sup>159</sup> 5 U.S.C. § 601(3) (incorporating by reference the definition of “small business concern” in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such terms which are appropriate to the activities of the agency and publishes such definitions(s) in the Federal Register.”

<sup>160</sup> 15 U.S.C. § 632.

<sup>161</sup> See SBA, Programs and Services, SBA Pamphlet No. CO-0028, at page 40 (July 2002).

owned and operated and is not dominant in its field.”<sup>162</sup> Nationwide, as of 2002, there were approximately 1.6 million small organizations.<sup>163</sup> The term “small governmental jurisdiction” is defined generally as “governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.”<sup>164</sup> Census Bureau data for 2002 indicate that there were 87,525 local governmental jurisdictions in the United States.<sup>165</sup> We estimate that, of this total, 84,377 entities were “small governmental jurisdictions.”<sup>166</sup> Thus, we estimate that most governmental jurisdictions are small.

## 1. Telecommunications Service Entities

### a. Wireless Telecommunications Service Providers

12. Pursuant to 47 C.F.R. § 20.18(a), the Commission’s 911 Service requirements are only applicable to Commercial Mobile Radio Service (CMRS) “[providers], excluding mobile satellite service operators, to the extent that they: (1) Offer real-time, two way switched voice service that is interconnected with the public switched network; and (2) Utilize an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls. These requirements are applicable to entities that offer voice service to consumers by purchasing airtime or capacity at wholesale rates from CMRS licensees.”

13. Below, for those services subject to auctions, we note that, as a general matter, the number of winning bidders that qualify as small businesses at the close of an auction does not necessarily represent the number of small businesses currently in service. Also, the Commission does not generally track subsequent business size unless, in the context of assignments or transfers, unjust enrichment issues are implicated.

14. *Wireless Telecommunications Carriers (except Satellite)*. Since 2007, the Census Bureau has placed wireless firms within this new, broad, economic census category. Prior to that time, such firms were within the now-superseded categories of “Paging” and “Cellular and Other Wireless Telecommunications.” Under the present and prior categories, the SBA has deemed a wireless business to be small if it has 1,500 or fewer employees. Because Census Bureau data are not yet available for the new category, we will estimate small business prevalence using the prior categories and associated data. For the category of Paging, data for 2002 show that there were 807 firms that operated for the entire year. Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more. For the category of Cellular and Other Wireless Telecommunications, data for 2002 show that there were 1,397 firms that operated for the entire year. Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more. Thus, we estimate that the majority of wireless firms are small.

15. *Wireless Service Providers*. The SBA has developed a small business size standard for wireless firms within the two broad economic census categories of “Paging” and “Cellular and Other

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<sup>162</sup> 5 U.S.C. § 601(4).

<sup>163</sup> Independent Sector, *The New Nonprofit Almanac & Desk Reference* (2002).

<sup>164</sup> 5 U.S.C. § 601(5).

<sup>165</sup> U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, Section 8, page 272, Table 415.

<sup>166</sup> We assume that the villages, school districts, and special districts are small, and total 48,558. See U.S. Census Bureau, *Statistical Abstract of the United States: 2006*, section 8, page 273, Table 417. For 2002, Census Bureau data indicate that the total number of county, municipal, and township governments nationwide was 38,967, of which 35,819 were small. *Id.*

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Wireless Telecommunications." Under both categories, the SBA deems a wireless business to be small if it has 1,500 or fewer employees. For the census category of Paging, Census Bureau data for 2002 show that there were 807 firms in this category that operated for the entire year. Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more. Thus, under this category and associated small business size standard, the majority of firms can be considered small. For the census category of Cellular and Other Wireless Telecommunications, Census Bureau data for 2002 show that there were 1,397 firms in this category that operated for the entire year. Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more. Thus, under this second category and size standard, the majority of firms can, again, be considered small.

16. *Incumbent LECs.* Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent LECs. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees. According to Commission data, 1,311 carriers have reported that they are engaged in the provision of incumbent local exchange services. Of these 1,311 carriers, an estimated 1,024 have 1,500 or fewer employees and 287 have more than 1,500 employees. Consequently, the Commission estimates that most providers of incumbent local exchange service are small businesses that may be affected by our action.

17. *Competitive LECs, Competitive Access Providers (CAPs), "Shared-Tenant Service Providers," and "Other Local Service Providers."* Neither the Commission nor the SBA has developed a small business size standard specifically for these service providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees. According to Commission data, 1,005 carriers have reported that they are engaged in the provision of either competitive access provider services or competitive LEC services. Of these 1,005 carriers, an estimated 918 have 1,500 or fewer employees and 87 have more than 1,500 employees. In addition, 16 carriers have reported that they are "Shared-Tenant Service Providers," and all 16 are estimated to have 1,500 or fewer employees. In addition, 89 carriers have reported that they are "Other Local Service Providers," and all 89, have 1,500 or fewer employees. Consequently, the Commission estimates that most providers of competitive local exchange service, competitive access providers, "Shared-Tenant Service Providers," and "Other Local Service Providers" are small entities.

18. *Broadband Personal Communications Service.* The broadband Personal Communications Service (PCS) spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission has created a small business size standard for Blocks C and F as an entity that has average gross revenues of less than \$40 million in the three previous calendar years. For Block F, an additional small business size standard for "very small business" was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years. These small business size standards, in the context of broadband PCS auctions, have been approved by the SBA. No small businesses within the SBA-approved small business size standards bid successfully for licenses in Blocks A and B. There were 90 winning bidders that qualified as small entities in the C Block auctions. A total of 93 "small" and "very small" business bidders won approximately 40 percent of the 1,479 licenses for Blocks D, E, and F. In 1999, the Commission reaucted 155 C, D, E, and F Block licenses; there were 113 small business winning bidders.

19. In 2001, the Commission completed the auction of 422 C and F Broadband PCS licenses in Auction 35. Of the 35 winning bidders in this auction, 29 qualified as "small" or "very small" businesses. Subsequent events concerning Auction 35, including judicial and agency determinations, resulted in a total of 163 C and F Block licenses being available for grant. In 2005, the Commission completed an auction of 188 C block licenses and 21 F block licenses in Auction 58. There were 24

winning bidders for 217 licenses. Of the 24 winning bidders, 16 claimed small business status and won 156 licenses. In 2007, the Commission completed an auction of 33 licenses in the A, C, and F Blocks in Auction 71. Of the 14 winning bidders, six were designated entities. In 2008, the Commission completed an auction of 20 Broadband PCS licenses in the C, D, E and F block licenses in Auction 78.

20. *Narrowband Personal Communications Service.* In 1994, the Commission conducted an auction for Narrowband PCS licenses. A second auction was also conducted later in 1994. For purposes of the first two Narrowband PCS auctions, “small businesses” were entities with average gross revenues for the prior three calendar years of \$40 million or less. Through these auctions, the Commission awarded a total of 41 licenses, 11 of which were obtained by four small businesses. To ensure meaningful participation by small business entities in future auctions, the Commission adopted a two-tiered small business size standard in the Narrowband PCS Second Report and Order. A “small business” is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than \$40 million. A “very small business” is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than \$15 million. The SBA has approved these small business size standards. A third auction was conducted in 2001. Here, five bidders won 317 (Metropolitan Trading Areas and nationwide) licenses. Three of these claimed status as a small or very small entity and won 311 licenses.

21. *Specialized Mobile Radio.* The Commission awards “small entity” bidding credits in auctions for Specialized Mobile Radio (SMR) geographic area licenses in the 800 MHz and 900 MHz bands to firms that had revenues of no more than \$15 million in each of the three previous calendar years. The Commission awards “very small entity” bidding credits to firms that had revenues of no more than \$3 million in each of the three previous calendar years. The SBA has approved these small business size standards for the 900 MHz Service. The Commission has held auctions for geographic area licenses in the 800 MHz and 900 MHz bands. The 900 MHz SMR was completed in 1996. Sixty bidders claiming that they qualified as small businesses under the \$15 million size standard won 263 geographic area licenses in the 900 MHz SMR band. The 800 MHz SMR auction for the upper 200 channels was conducted in 1997. Ten bidders claiming that they qualified as small businesses under the \$15 million size standard won 38 geographic area licenses for the upper 200 channels in the 800 MHz SMR band. A second auction for the 800 MHz band was conducted in 2002 and included 23 BEA licenses. One bidder claiming small business status won five licenses.

22. The auction of the 1,050 800 MHz SMR geographic area licenses for the General Category channels was conducted in 2000. Eleven bidders won 108 geographic area licenses for the General Category channels in the 800 MHz SMR band qualified as small businesses under the \$15 million size standard. In an auction completed in 2000, a total of 2,800 Economic Area licenses in the lower 80 channels of the 800 MHz SMR service were awarded. Of the 22 winning bidders, 19 claimed “small business” status and won 129 licenses. Thus, combining all three auctions, 40 winning bidders for geographic licenses in the 800 MHz SMR band claimed status as small business.

23. In addition, there are numerous incumbent site-by-site SMR licensees and licensees with extended implementation authorizations in the 800 and 900 MHz bands. We do not know how many firms provide 800 MHz or 900 MHz geographic area SMR pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of no more than \$15 million. One firm has over \$15 million in revenues. In addition, we do not know how many of these firms have 1500 or fewer employees. We assume, for purposes of this analysis, that all of the remaining existing extended implementation authorizations are held by small entities, as that small business size standard is approved by the SBA.

24. *AWS Services (1710–1755 MHz and 2110–2155 MHz bands (AWS-1); 1915–1920 MHz, 1995–2000 MHz, 2020–2025 MHz and 2175–2180 MHz bands (AWS-2); 2155–2175 MHz band (AWS-3)).* For the AWS-1 bands, the Commission has defined a “small business” as an entity with average

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annual gross revenues for the preceding three years not exceeding \$40 million, and a “very small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million. For AWS-2 and AWS-3, although we do not know for certain which entities are likely to apply for these frequencies, we note that the AWS-1 bands are comparable to those used for cellular service and personal communications service. The Commission has not yet adopted size standards for the AWS-2 or AWS-3 bands but proposes to treat both AWS-2 and AWS-3 similarly to broadband PCS service and AWS-1 service due to the comparable capital requirements and other factors, such as issues involved in relocating incumbents and developing markets, technologies, and services.

25. *Rural Radiotelephone Service.* The Commission has not adopted a size standard for small businesses specific to the Rural Radiotelephone Service. A significant subset of the Rural Radiotelephone Service is the Basic Exchange Telephone Radio System (“BETRS”). In the present context, we will use the SBA’s small business size standard applicable to Wireless Telecommunications Carriers (except Satellite), i.e., an entity employing no more than 1,500 persons.<sup>167</sup> There are approximately 1,000 licensees in the Rural Radiotelephone Service, and the Commission estimates that there are 1,000 or fewer small entity licensees in the Rural Radiotelephone Service that may be affected by the rules and policies adopted herein.

26. *Wireless Communications Services.* This service can be used for fixed, mobile, radiolocation, and digital audio broadcasting satellite uses in the 2305-2320 MHz and 2345-2360 MHz bands. The Commission defined “small business” for the wireless communications services (WCS) auction as an entity with average gross revenues of \$40 million for each of the three preceding years, and a “very small business” as an entity with average gross revenues of \$15 million for each of the three preceding years. The SBA has approved these definitions. The Commission auctioned geographic area licenses in the WCS service. In the auction, which commenced on April 15, 1997 and closed on April 25, 1997, there were seven bidders that won 31 licenses that qualified as very small business entities, and one bidder that won one license that qualified as a small business entity.

27. *220 MHz Radio Service – Phase I Licensees.* The 220 MHz service has both Phase I and Phase II licenses. Phase I licensing was conducted by lotteries in 1992 and 1993. There are approximately 1,515 such non nationwide licensees and four nationwide licensees currently authorized to operate in the 220 MHz Band. The Commission has not developed a definition of small entities specifically applicable to such incumbent 220 MHz Phase I licensees. To estimate the number of such licensees that are small businesses, we apply the small business size standard under the SBA rules applicable to Wireless Telecommunications Carriers (except Satellite). This category provides that a small business is a wireless company employing no more than 1,500 persons. The Commission estimates that most such licensees are small businesses under the SBA’s small business standard.

28. *220 MHz Radio Service – Phase II Licensees.* The 220 MHz service has both Phase I and Phase II licenses. The Phase II 220 MHz service is a new service, and is subject to spectrum auctions. In the 220 MHz Third Report and Order, the Commission adopted a small business size standard for defining “small” and “very small” businesses for purposes of determining their eligibility for special provisions such as bidding credits and installment payments. This small business standard indicates that a “small business” is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$15 million for the preceding three years. A “very small business” is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that do not exceed \$3 million for the preceding three years. The SBA has approved these small size standards. Auctions of Phase II licenses commenced on and closed in 1998. In the first auction, 908 licenses were auctioned in three different sized geographic areas: three nationwide licenses, 30 Regional

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<sup>167</sup> NAICS Code 51210.

Economic Area Group (EAG) Licenses, and 875 Economic Area (EA) Licenses. Of the 908 licenses auctioned, 693 were sold. Thirty-nine small businesses won 373 licenses in the first 220 MHz auction. A second auction included 225 licenses: 216 EA licenses and 9 EAG licenses. Fourteen companies claiming small business status won 158 licenses. A third auction included four licenses: 2 BEA licenses and 2 EAG licenses in the 220 MHz Service. No small or very small business won any of these licenses. In 2007, the Commission conducted a fourth auction of the 220 MHz licenses. Bidding credits were offered to small businesses. A bidder with attributed average annual gross revenues that exceeded \$3 million and did not exceed \$15 million for the preceding three years (“small business”) received a 25 percent discount on its winning bid. A bidder with attributed average annual gross revenues that did not exceed \$3 million for the preceding three years received a 35 percent discount on its winning bid (“very small business”). Auction 72, which offered 94 Phase II 220 MHz Service licenses, concluded in 2007. In this auction, five winning bidders won a total of 76 licenses. Two winning bidders identified themselves as very small businesses won 56 of the 76 licenses. One of the winning bidders that identified themselves as a small business won 5 of the 76 licenses won.

29. *700 MHz Guard Band Licenses.* In the 700 MHz Guard Band Order, the Commission adopted size standards for “small businesses” and “very small businesses” for purposes of determining their eligibility for special provisions such as bidding credits and installment payments. A small business in this service is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years. Additionally, a “very small business” is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years. SBA approval of these definitions is not required. In 2000, the Commission conducted an auction of 52 Major Economic Area (“MEA”) licenses. Of the 104 licenses auctioned, 96 licenses were sold to nine bidders. Five of these bidders were small businesses that won a total of 26 licenses. A second auction of 700 MHz Guard Band licenses commenced and closed in 2001. All eight of the licenses auctioned were sold to three bidders. One of these bidders was a small business that won a total of two licenses.

30. *Upper 700 MHz Band Licenses.* In the 700 MHz Second Report and Order, the Commission revised its rules regarding Upper 700 MHz licenses. On January 24, 2008, the Commission commenced Auction 73 in which several licenses in the Upper 700 MHz band were available for licensing: 12 Regional Economic Area Grouping licenses in the C Block, and one nationwide license in the D Block. The auction concluded on March 18, 2008, with 3 winning bidders claiming very small business status (those with attributable average annual gross revenues that do not exceed \$15 million for the preceding three years) and winning five licenses.

31. *Lower 700 MHz Band Licenses.* The Commission adopted criteria for defining three groups of small businesses for purposes of determining their eligibility for special provisions such as bidding credits. The Commission has defined a small business as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years. A very small business is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years. Additionally, the Lower 700 MHz Band has a third category of small business status that may be claimed for Metropolitan/Rural Service Area (MSA/RSA) licenses. The third category is entrepreneur, which is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$3 million for the preceding three years. The SBA has approved these small size standards. An auction of 740 licenses (one license in each of the 734 MSAs/RSAs and one license in each of the six Economic Area Groupings (EAGs)) commenced on August 27, 2002, and closed on September 18, 2002. Of the 740 licenses available for auction, 484 licenses were sold to 102 winning bidders. Seventy-two of the winning bidders claimed small business, very small business or entrepreneur status and won a total of 329 licenses. A second auction commenced on May 28, 2003, and closed on June 13, 2003, and included 256 licenses: 5 EAG licenses and 476 CMA

licenses. Seventeen winning bidders claimed small or very small business status and won sixty licenses, and nine winning bidders claimed entrepreneur status and won 154 licenses.

32. *Offshore Radiotelephone Service.* This service operates on several ultra high frequencies (“UHF”) television broadcast channels that are not used for television broadcasting in the coastal areas of states bordering the Gulf of Mexico. There is presently 1 licensee in this service. We do not have information whether that licensee would qualify as small under the SBA’s small business size standard for Wireless Telecommunications Carriers (except Satellite) services. Under that SBA small business size standard, a business is small if it has 1,500 or fewer employees.

33. *Wireless Telephony.* Wireless telephony includes cellular, personal communications services (PCS), and specialized mobile radio (SMR) telephony carriers. As noted, the SBA has developed a small business size standard for Wireless Telecommunications Carriers (except Satellite). Under that SBA small business size standard, a business is small if it has 1,500 or fewer employees. According to Trends in Telephone Service data, 434 carriers reported that they were engaged in wireless telephony. Of these, an estimated 222 have 1,500 or fewer employees and 212 have more than 1,500 employees. We have estimated that 222 of these are small under the SBA small business size standard.

34. *Satellite Telecommunications and All Other Telecommunications.* These two economic census categories address the satellite industry. The first category has a small business size standard of \$13.5 million or less in average annual receipts, under SBA rules.<sup>168</sup> The second has a size standard of \$23.5 million or less in annual receipts.<sup>169</sup> The most current Census Bureau data in this context, however, are from the (last) economic census of 2002, and we will use those figures to gauge the prevalence of small businesses in these categories.

35. The category of Satellite Telecommunications “comprises establishments primarily engaged in providing telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications.” For this category, Census Bureau data for 2002 show that there were a total of 371 firms that operated for the entire year. Of this total, 307 firms had annual receipts of under \$10 million, and 26 firms had receipts of \$10 million to \$24,999,999. Consequently, we estimate that the majority of Satellite Telecommunications firms are small entities that might be affected by our action.

36. The second category of All Other Telecommunications comprises, inter alia, “establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems.” For this category, Census Bureau data for 2002 show that there were a total of 332 firms that operated for the entire year. Of this total, 303 firms had annual receipts of under \$10 million and 15 firms had annual receipts of \$10 million to \$24,999,999. Consequently, we estimate that the majority of All Other Telecommunications firms are small entities that might be affected by our action.

37. *Computer Systems Design and Related Services.* This industry comprises establishments primarily engaged in providing expertise in the field of information technologies through one or more of the following activities: (1) writing, modifying, testing, and supporting software to meet the needs of a particular customer; (2) planning and designing computer systems that integrate computer hardware,

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<sup>168</sup> NAICS Code 517410.

<sup>169</sup> NAICS Code 517919.

software, and communication technologies; (3) on-site management and operation of clients' computer systems and/or data processing facilities; and (4) other professional and technical computer-related advice and services.

**b. Wireline Carriers and Service Providers**

38. We have included small incumbent local exchange carriers (LECs) in this present RFA analysis. As noted above, a “small business” under the RFA is one that, inter alia, meets the pertinent small business size standard (e.g., a telephone communications business having 1,500 or fewer employees) and “is not dominant in its field of operation.” The SBA’s Office of Advocacy contends that, for RFA purposes, small incumbent LECs are not dominant in their field of operation because any such dominance is not “national” in scope. We have therefore included small incumbent LECs in this RFA analysis, although we emphasize that this RFA action has no effect on Commission analyses and determinations in other, non-RFA contexts.

39. *Incumbent LECs.* Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent LECs. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees. According to Commission data, 1,311 carriers have reported that they are engaged in the provision of incumbent local exchange services. Of these 1,311 carriers, an estimated 1,024 have 1,500 or fewer employees and 287 have more than 1,500 employees. Consequently, the Commission estimates that most providers of incumbent local exchange service are small businesses that may be affected by our action.

40. *Competitive LECs, Competitive Access Providers (CAPs), “Shared-Tenant Service Providers,” and “Other Local Service Providers.”* Neither the Commission nor the SBA has developed a small business size standard specifically for these service providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees. According to Commission data, 1,005 carriers have reported that they are engaged in the provision of either competitive access provider services or competitive LEC services. Of these 1,005 carriers, an estimated 918 have 1,500 or fewer employees and 87 have more than 1,500 employees. In addition, 16 carriers have reported that they are “Shared-Tenant Service Providers,” and all 16 are estimated to have 1,500 or fewer employees. In addition, 89 carriers have reported that they are “Other Local Service Providers,” and all 89, have 1,500 or fewer employees. Consequently, the Commission estimates that most providers of competitive local exchange service, competitive access providers, “Shared-Tenant Service Providers,” and “Other Local Service Providers” are small entities.

**c. Equipment Manufacturers**

41. *Wireless Communications Equipment Manufacturing.* The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.”<sup>170</sup> The SBA has developed a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees.<sup>171</sup> According to Census Bureau data for 2002, there were a total of

<sup>170</sup> U.S. Census Bureau, 2002 NAICS Definitions, “334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing”; <http://www.census.gov/epcd/naics02/def/NDEF334.HTM#N3342>.

<sup>171</sup> 13 C.F.R. § 121.201, NAICS code 334220.

1,041 establishments in this category that operated for the entire year.<sup>172</sup> Of this total, 1,010 had employment of under 500, and an additional 13 had employment of 500 to 999.<sup>173</sup> Thus, under this size standard, the majority of firms can be considered small.

42. *Semiconductor and Related Device Manufacturing.* These establishments manufacture “computer storage devices that allow the storage and retrieval of data from a phase change, magnetic, optical, or magnetic/optical media.”<sup>174</sup> The SBA has developed a small business size standard for this category of manufacturing; that size standard is 500 or fewer employees.<sup>175</sup> According to Census Bureau data for 1997, there were 1,082 establishments in this category that operated for the entire year.<sup>176</sup> Of these, 987 had employment of under 500, and 52 establishments had employment of 500 to 999.

**D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities**

43. In the Second Report and Order we require the provision of confidence and uncertainty data by carriers on a per call basis upon PSAP request beginning two years after the effective date of the order. Additionally, carriers must submit a list of specific counties or portions of counties where they utilize exclusions within 90 days following approval from the Office of Management and Budget for the related information collection. Some carriers may have to revise their internal recordkeeping procedures to comply with the Order’s requirements, although the Order imposes no specific requirements in this regard.

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

44. The RFA requires an agency to describe any significant, specifically small business alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) and exemption from coverage of the rule, or any part thereof, for small entities.”<sup>177</sup>

45. In the *Notice*, the Commission specifically considered the impact of potential revisions to the wireless E911 accuracy rules on small entities. The *Notice* asked whether certain classes of carriers

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<sup>172</sup> U.S. Census Bureau, American FactFinder, 2002 Economic Census, Industry Series, Industry Statistics by Employment Size, NAICS code 334220 (released May 26, 2005); <http://factfinder.census.gov>. The number of “establishments” is a less helpful indicator of small business prevalence in this context than would be the number of “firms” or “companies,” because the latter take into account the concept of common ownership or control. Any single physical location for an entity is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses. In this category, the Census breaks-out data for firms or companies only to give the total number of such entities for 2002, which was 929.

<sup>173</sup> *Id.* An additional 18 establishments had employment of 1,000 or more.

<sup>174</sup> U.S. Census Bureau, “2002 NAICS Definitions: 334413 Semiconductor and Related Device Manufacturing” (Feb. 2004) <[www.census.gov](http://www.census.gov)>.

<sup>175</sup> 13 C.F.R. § 121.201, NAICS code 334413.

<sup>176</sup> U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, “Semiconductor and Related Device Manufacturing,” Table 4, NAICS code 334413 (issued July 1999).

<sup>177</sup> 5 U.S.C. §§ 603(c)(1)-(c)(4).

and/or rural networks should be held to a uniform standard of accuracy if the Commission were to adopt one, and if so, by what date they should be required to come into compliance with a more stringent, uniform accuracy requirement.<sup>178</sup> The questions posed in the *Notice* enabled the Commission to assess whether similar concessions to small entities were warranted with respect to wireless E911 accuracy requirements.

46. The Commission has determined that the benefits of requiring all CMRS carriers to comply with the requirements of Section 20.18(h) at the county or PSAP service area level far outweigh any burdens associated with implementing these requirements. E911 represents a significant and valuable investment that enables emergency responders to reach the site of an emergency as quickly as possible. We acknowledge that compliance with the rule adopted in the order may impose cost burdens on small entities. However, given the great public interest benefits of the rules, we find that the public interest benefits outweigh the economic burdens of providing greater location accuracy. Furthermore, the order gives an ample amount of time – five years for network-based solutions and eight years for handset-based solutions - to come into compliance with section 20.18(h) at the county or PSAP level, in part because we have taken into account the specific economic and technological concerns that small entities face. We considered the alternative of requiring a shorter timeframe for compliance; however, the adopted timeframes were the best possible balance between the need for accurate location data and the economic and technological concerns of carriers. We also allowed for carriers to make exceptions for areas that lack triangulation ability and those that are heavily forested. This should allow smaller carriers the ability to mitigate any negative economic impacts that might affect their ability to comply in all areas that they serve.

47. Additionally, by allowing the option for carriers to comply at either the county or PSAP level, we permit carriers to take into account natural and network topographies (such as foliage levels, terrain, cell site density, etc.) and the respective impact of their location technologies choices. Therefore, permitting carriers the option to choose between PSAP-level compliance and county-level compliance maximizes the ability of carriers to use current technology to meet the location accuracy standard of section 20.18(h), further lessening the burden on small entities.

48. We addressed alternative rules in the Second Report and Order, and determined that the benefits afforded by the adoption of these rules would not be achieved under any alternatives rules. The rules adopted in the Second Report and Order include compliance timeframes, limitations and exemptions that will allow carriers a measure of flexibility to account for technical and cost-related concerns.<sup>179</sup>

49. Finally, in the event that small entities face unique circumstances with regard to these rules, such entities may request waiver relief from the Commission. Accordingly, we find that we have discharged our duty to consider the burdens imposed on small entities.

50. **Report to Congress:** The Commission will send a copy of the Second Report and Order, including this FRFA, in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act.<sup>180</sup> In addition, the Commission will send a copy of the Second Report and Order, including this FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of the Second Report and Order and FRFA (or summaries thereof) will also be published in the Federal Register.<sup>181</sup>

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<sup>178</sup> See Notice at 6 ¶ 13.

<sup>179</sup> See discussion at ¶¶ 25-27.

<sup>180</sup> See 5 U.S.C. § 801(a)(1)(A).

<sup>181</sup> See 5 U.S.C. § 604(b).

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**APPENDIX C****Final Rules**

Part 20 of the Code of Federal Regulations is amended as follows:

**PART 20 – COMMERCIAL MOBILE RADIO SERVICES**

- 2. The authority for Part 20 remains unchanged.**
- 3. Section 20.18(h) is amended to read as follows:**
  - \* \* \*

(h) *Phase II accuracy.* Licensees subject to this section shall comply with the following standards for Phase II location accuracy and reliability, to be tested and measured either at the county or at the PSAP service area geographic level, based on outdoor measurements only:

(1) Network-Based Technologies:

(A) 100 meters for 67 percent of calls, consistent with the following benchmarks:

(i) One year from [effective date of the Order], carriers shall comply with this standard in 60 percent of counties or PSAP service areas. These counties or PSAP service areas must cover at least 70 percent of the population covered by the carrier across its entire network. Compliance will be measured on a per-county or per-PSAP basis using, at the carrier's election, either (1) network-based accuracy data, or (2) blended reporting as provided in paragraph (h)(1)(D) of this section.

(ii) Three years from [effective date of the Order], carriers shall comply with this standard in 70 percent of counties or PSAP service areas. These counties or PSAP service areas must cover at least 80 percent of the population covered by the carrier across its entire network. Compliance will be measured on a per-county or per-PSAP basis using, at the carrier's election, either (1) network-based accuracy data, or (2) blended reporting as provided in paragraph (h)(1)(D) of this section.

(iii) Five years from [effective date of the Order], carriers shall comply with this standard in 100% of counties or PSAP service areas covered by the carrier. Compliance will be measured on a per-county or per-PSAP basis, using, at the carrier's election, either (1) network-based accuracy data, (2) blended reporting as provided in paragraph (h)(1)(D) of this section, or (3) handset-based accuracy data as provided in paragraph (h)(1)(E) of this section.

(B) 300 meters for 90 percent of calls, consistent with the following benchmarks:

(i) Three years from [effective date of the Order], carriers shall comply with this standard in 60 percent of counties or PSAP service areas. These counties or PSAP service areas must cover at least 70 percent of the population covered by the carrier across its entire network. Compliance will be measured on a per-county or per-PSAP basis using, at the carrier's election, either (1) network-based accuracy data, or (2) blended reporting as provided in paragraph (h)(1)(D) of this section.

(ii) Five years from [effective date of the Order], carriers shall comply in 70 percent of counties or PSAP service areas. These counties or PSAP service areas must cover at least 80 percent of the population covered by the carrier across its entire network. Compliance will be measured on a per-county or per-PSAP basis using, at the carrier's election, either (1) network-based accuracy data, or (2) blended reporting as provided in paragraph (h)(1)(D) of this section.

(iii) Eight years from [effective date of the Order], carriers shall comply in 85 percent of counties or PSAP service areas. Compliance will be measured on a per-county or per-PSAP basis using, at the carrier's election, either (1) network-based accuracy data, (2) blended reporting as provided in paragraph (h)(1)(D) of this section, or (3) handset-based accuracy data as provided in paragraph (h)(1)(E) of this section.

(C) County-level or PSAP-level location accuracy standards for network-based technologies will be applicable to those counties or PSAP service areas, on an individual basis, in which a network-based carrier has deployed Phase II in at least one cell site located within a county's or PSAP service area's boundary. Compliance with the requirements of paragraph (h)(1)(A) and paragraph (h)(1)(B) of this section shall be measured and reported independently.

(D) Accuracy data from both network-based solutions and handset-based solutions may be blended to measure compliance with the accuracy requirements of paragraph (h)(1)(A)(i)-(iii) and paragraph (h)(1)(B)(i)-(iii) of this section. Such blending shall be based on weighting accuracy data in the ratio of assisted GPS ("A-GPS") handsets to non-A-GPS handsets in the carrier's subscriber base. The weighting ratio shall be applied to the accuracy data from each solution and measured against the network-based accuracy requirements of paragraph (h)(1) of this section.

(E) A carrier may rely solely on handset-based accuracy data in any county or PSAP service area if at least 85 percent of its subscribers, network-wide, use A-GPS handsets, or if it offers A-GPS handsets to subscribers in that county or PSAP service area at no cost to the subscriber.

(F) A carrier may exclude from compliance particular counties, or portions of counties, where triangulation is not technically possible, such as locations where at least three cell sites are not sufficiently visible to a handset. Carriers must file a list of the specific counties or portions of counties where they are utilizing this exclusion within 90 days following approval from the Office of Management and Budget for the related information collection. This list must be submitted electronically into PS Docket No. 07-114, and copies must be sent to the National Emergency Number Association, the Association of Public-Safety Communications Officials-International, and the National Association of State 9-1-1 Administrators. Further, carriers must submit in the same manner any changes to their exclusion lists within thirty days of discovering such changes. This exclusion will sunset on [8 years after effective date].

(2) Handset-Based Technologies:

(A) Two years from [effective date of the Order], 50 meters for 67 percent of calls, and 150 meters for 80 percent of calls, on a per-county or per-PSAP basis. However, a carrier may exclude up to 15 percent of counties or PSAP service areas from the 150 meter requirement based upon heavy forestation that limits handset-based technology accuracy in those counties or PSAP service areas.

(B) Eight years from [effective date of the Order], 50 meters for 67 percent of calls, and 150 meters for 90 percent of calls, on a per-county or per-PSAP basis. However, a carrier may exclude up to 15 percent of counties or PSAP service areas from the 150 meter requirement based upon heavy forestation that limits handset-based technology accuracy in those counties or PSAP service areas.

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(C) Carriers must file a list of the specific counties or PSAP service areas where they are utilizing the exclusion for heavy forestation within 90 days following approval from the Office of Management and Budget for the related information collection. This list must be submitted electronically into PS Docket No. 07-114, and copies must be sent to the National Emergency Number Association, the Association of Public-Safety Communications Officials-International, and the National Association of State 9-1-1 Administrators. Further, carriers must submit in the same manner any changes to their exclusion lists within thirty days of discovering such changes.

(3) Confidence and Uncertainty Data: Two years after [effective date of the Order], all carriers subject to this section shall be required to provide confidence and uncertainty data on a per-call basis upon the request of a PSAP. Once a carrier has established baseline confidence and uncertainty levels in a county or PSAP service area, ongoing accuracy shall be monitored based on the trending of uncertainty data and additional testing shall not be required. All entities responsible for transporting confidence and uncertainty between wireless carriers and PSAPs, including LECs, CLECs, owners of E911 networks, and emergency service providers (collectively, System Service Providers (SSPs)) must implement any modifications that will enable the transmission of confidence and uncertainty data provided by wireless carriers to the requesting PSAP. If an SSP does not pass confidence and uncertainty data to PSAPs, the SSP has the burden of proving that it is technically infeasible for it to provide such data.

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**STATEMENT OF**  
**CHAIRMAN JULIUS GENACHOWSKI**

Re: Wireless E911 Location Accuracy Requirements, *Second Report and Order*, PS Docket No. 07-114; Wireless E911 Location Accuracy Requirements, E911 Requirements for IP-Enabled Service Providers, *Further Notice of Proposed Rulemaking and Notice of Inquiry*, PS Docket No. 07-114, WC Docket No. 05-196.

When Americans call 9-1-1 from their landlines, first responders receive location information that's accurate more than 98% of the time. When Americans call 9-1-1 from their mobile phones, first responders are about 50% less likely to receive precise information about your location. Fifty percent...

The inaccuracy is not just a few feet, but up to one or two miles—and sometimes no location information at all.

Meanwhile, more and more 9-1-1 calls are being made from mobile phones – over 425,000 mobile 9-1-1 calls every day, and rising.

What does that mean in practical terms?

Yesterday, I had a chance to visit with the men and women who answer 9-1-1 calls at the McConnell Public Safety Operations Center in Fairfax, Virginia – and I saw, up close, the challenge of dealing with increasingly mobile 9-1-1 calls.

The Officers I met with said that when they don't receive accurate location data as part of a wireless 9-1-1 call, it can cost the first responders six minutes in delay trying to locate the caller. Sometimes more. Precious minutes that can be the difference between life and death.

Now, mobile telephones play a vital and positive role in our emergency safety system. Mobile phones let people call 9-1-1 from places where there are no landlines readily available, enhancing public safety.

And like any new technology, they create new issues, like distracted driving and the location-accuracy issue we are tackling today.

The order we adopt today makes location-accuracy requirements more stringent for wireless service providers. This will give first responders a better chance at locating callers much faster. It will enhance the public's safety.

And we have more work to do. Our *Further Notice* launches an inquiry on how to improve *indoor* location accuracy, and our *NOI* accelerates our work on how new and developing broadband technologies can help Americans reach 9-1-1 wherever they may be.

Our actions today fulfill another recommendation of the National Broadband Plan.

One final point on mobile 9-1-1 location accuracy. When I was in Fairfax yesterday, the public safety officers described ways that people can help first responders, and themselves, when they are making 9-1-1 calls from mobile phones.

Try to pay attention to landmarks, and mile markers on highways for example; remember the

floor you're on in a tall building.

I have instructed our Public Safety and Consumer Bureaus to develop, together with the public safety community, a fact sheet for consumers with helpful information on mobile 9-1-1 calls. We will soon have this on our website and work together with the public safety community on ways to pursue this education initiative – to help mobile 9-1-1 callers better and more quickly locate them in times of emergency.

I thank the staff for its great and ongoing work in this area. I look forward to continuing to work very closely with the public safety community, wireless service providers, and consumer advocates to continue to harness technology to improve the 9-1-1 service.

**STATEMENT OF**  
**COMMISSIONER MICHAEL J. COPPS**  
**APPROVING**

Re: Wireless E911 Location Accuracy Requirements, *Second Report and Order*, PS Docket No. 07-114; Wireless E911 Location Accuracy Requirements, E911 Requirements for IP-Enabled Service Providers, *Further Notice of Proposed Rulemaking and Notice of Inquiry*, PS Docket No. 07-114, WC Docket No. 05-196.

I welcome these steps forward as we work to enhance the safety of the American people—always Job One for the FCC. Enhanced 911 saves lives. Experience has shown us that. The steps we take today will further improve the ability of first responders accurately to locate wireless E911 callers in emergencies. We do so based on a solid record and with a practical approach that relies on currently available technologies. More importantly, our actions reflect a general consensus among important E911 stakeholders—including the Association of Public-Safety Communications Officials and the National Emergency Number Association—on how to get this job done. So it's action time and today we take action.

We have come a good long distance since I came to the agency in 2001. I arrived at a time when carriers were regularly missing deadlines for deploying E911, manufacturers were failing to make equipment and software available quickly enough, and technology was still pretty basic. The Commission has been generally aggressive in recent years in encouraging all stakeholders and players to push the envelope and accomplish what needs to be accomplished to make Enhanced E911 a reality. With life-critical technology like E911, we must always do better than “business as usual.” We must make the extra effort, expend the necessary resources and keep the objective front-and-center. With the consensus adopted in today's Order, I think we are clearly on the right road.

While I support today's decision, including its recognition of the unique challenges facing rural and remote communities, I remain worried. We allow, for example, network-based carriers to exclude from location accuracy compliance those counties where triangulation is not technically feasible. I understand that the technology and infrastructure in a given area today may not allow a carrier to comply with the specific location accuracy targets we require. That said, locating emergency callers living in rural America is no less important than locating emergency callers in other parts of the country. I expect carriers, even in those areas excluded from location accuracy compliance, to take every step technologically possible to maximize location accuracy for E911 calls and to do it with the sense of urgency that the safety of the people compels. We must never lose sight of this particular challenge as we move forward with implementation of the National Broadband Plan and work to expand wireless infrastructure in rural America. More towers mean not only more broadband, but can also mean more accurate E911 . . . and more lives saved. I am pleased we recognize that rural Americans cannot be left in the lurch going forward.

By setting a sunset date for the location accuracy exclusion, we encourage carriers and manufacturers to expand A-GPS handsets in their subscriber base, which will make the network-based exclusion unnecessary in the long term.

Today we also launch a separate and much-needed examination into the next phase of wireless E911 location accuracy and reliability. With the explosion of wireless usage, devices and applications, including those encompassing voice over Internet Protocol (VoIP), we seek comment on the ongoing evolution of wireless technologies and the implications for location accuracy. Consistent with the National Broadband Plan, we look at the impact of Next Generation 911 (NG911) deployment and its

potential for location accuracy. The FCC should always be looking for ways to harness the benefits of technology advances to improve accuracy and speed of response in emergencies, and to provide more interoperable and integrated emergency response capabilities for PSAPs, hospitals and first responders.

The Chairman is to be commended for bringing this important item to the full Commission for consideration. I particularly want to thank the staff of the Public Safety and Homeland Security for their hard work and thorough analysis. I look forward to working with my colleagues, with the staff and with all E911 stakeholders as we continue to strengthen E911 requirements and capabilities.

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**STATEMENT OF**  
**COMMISSIONER ROBERT M. McDOWELL**

Re: Wireless E911 Location Accuracy Requirements, *Second Report and Order*, PS Docket No. 07-114; Wireless E911 Location Accuracy Requirements, E911 Requirements for IP-Enabled Service Providers, *Further Notice of Proposed Rulemaking and Notice of Inquiry*, PS Docket No. 07-114, WC Docket No. 05-196.

For some time now, I have strongly encouraged efforts to forge consensus on the technological challenges to improving the accuracy of locating wireless callers who face an emergency. I am delighted, therefore, that we have reached this day and I am pleased to support today's Report and Order. We are unanimously adopting rules that will satisfy the current needs of public safety personnel and the expectations of America's wireless consumers. I thank all the participants for sharing your expertise and knowledge on the complex issues discussed in this proceeding.

Given the great consumer demand for and constant technology upgrades to wireless services, the companion Further Notice of Proposed Rulemaking and Notice of Inquiry is the more important of the two documents we adopt today. We have an ongoing duty to ensure that consumers, industry and first responders will all benefit as more powerful products are developed and deployed.

I am pleased that the Commission is promoting a meaningful discussion on the longer term requirements for 911 capabilities. We are posing tough questions on the effect of location accuracy and automatic location identification improvements, including indoor testing capabilities, as well as the applicability of E911 requirements to additional wireless communications services, devices and applications, among other issues. As is reflected in the order we adopt today, harnessing the expertise of all interested stakeholders will serve the public interest and move all of us ahead to understand and solve these technological challenges in a straightforward, comprehensive and transparent manner.

Thank you to Jeff Cohen and Patrick Donovan for their leadership, as well as to the entire team in the Public Safety and Homeland Security Bureau for its important work.

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**STATEMENT OF**  
**COMMISSIONER MIGNON L. CLYBURN**

Re: Wireless E911 Location Accuracy Requirements, *Second Report and Order*, PS Docket No. 07-114; Wireless E911 Location Accuracy Requirements, E911 Requirements for IP-Enabled Service Providers, *Further Notice of Proposed Rulemaking and Notice of Inquiry*, PS Docket No. 07-114, WC Docket No. 05-196.

As I have mentioned before, one of the top priorities of this agency should be the safety of consumers. The accuracy of wireless E-9-1-1 location services has become an increasingly important public safety concern, because our citizens have become more dependent on their mobile wireless devices. This surge in the demand for mobile wireless services reflects, in large part, an increased demand for innovative broadband applications. But as the Fourteenth Report on Mobile Services highlights, this increased demand for mobile services, is also a result of more people opting to rely solely on their mobile wireless service for their communications needs. As the percentage of citizens who only rely on mobile services increases, so should our focus on improving the location accuracy of E-9-1-1 for emergency services.

The Order and Notices we adopt today, send important messages about the direction our communications industry should take with regard to improving E-9-1-1 services. As the history leading up to the Second Report and Order suggests, consensus by all stakeholders is a more effective way to make our citizens safer than litigation. I congratulate APCO, NENA, AT&T, Sprint, T-Mobile, and Verizon Wireless, for reaching a workable compromise on location accuracy standards, and for putting the safety of our citizens ahead of other interests.

The Further Notice of Proposed Rulemaking and Notice of Inquiry, demonstrate a comprehensive and balanced approach to promoting more accurate E-9-1-1 services. I was particularly pleased to see the Further Notice address the different problems that service providers face in challenging environments, such as certain rural areas. It may be the case, that all service providers, large and small, face technical challenges in providing E-9-1-1 services. It is also true however, that these problems are more acute in hard to serve areas, where 3G networks are not currently deployed. Therefore, we should promote improved location accuracy standards, while recognizing that different areas may require different approaches to achieving those standards. I was also pleased to see that both Notices recognize the importance of considering the interests of persons living with disabilities. I commend the parties, such as AT&T and CTIA, who urged all stakeholders to account for those interests in developing E-9-1-1 technical solutions.

The Notice of Inquiry properly asks about the feasibility of extending location accuracy requirements to the many new wireless devices and applications, that provide the equivalent of mobile telephony but because of technical classifications, are not subject to our E-9-1-1 rules. Consumers have come to expect, that they can make VoIP phone calls from their computers as well as from their iPhones and other smart phones. It is reasonable for them to expect that they can access E-9-1-1 services when using VoIP technology. The Commission should ensure that its E-9-1-1 rules adapt to keep pace with consumer expectations. I encourage large carriers, smaller service providers, and other stakeholders, to provide us with the relevant information we need to take a proper, thorough, look at this issue. I thank the staff of the Public Safety and Homeland Security Bureau for their hard work on these items.

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**STATEMENT OF**  
**COMMISSIONER MEREDITH A. BAKER**

Re: Wireless E911 Location Accuracy Requirements, *Second Report and Order*, PS Docket No. 07-114; Wireless E911 Location Accuracy Requirements, E911 Requirements for IP-Enabled Service Providers, *Further Notice of Proposed Rulemaking and Notice of Inquiry*, PS Docket No. 07-114, WC Docket No. 05-196.

I am pleased to support today's *Second Report and Order*, *Further Notice of Proposed Rulemaking*, and *Notice of Inquiry*. More than a decade ago, one of the first bills I ever worked on in Washington made 911 the national emergency number for mobile as well as fixed numbers. Fast forward to today when one of every four American homes has *only* wireless telephone service and standardizing access to emergency response services has become even more critical.<sup>182</sup> And, even in households that have both fixed and wireless service, one in seven receives all or nearly all calls on wireless telephones.<sup>183</sup>

Americans aren't just *receiving* calls on their wireless phones, either. Comments in our record reveal that in states such as Virginia and Texas, large majorities of 911 calls were *placed* on wireless phones. Those consumers, and countless others in emergency situations, will be safer and more secure as we require heightened standards for wireless carriers to ensure effective location of 911 callers.

I applaud the industry-wide cooperation in making these standards a reality. I also support the Commission's practical approach in allowing a carrier to blend network-based location data with A-GPS handset-based accuracy data to achieve the new Phase II network-based benchmarks.

However, it is important to note that these standards apply only to calls made outdoors. Today's *FNPRM* rightly inquires about the state of location-based technology and whether the FCC should consider enhancing E911 services for consumers placing 911 calls from indoor and in-building locations. Heightened standards for locating emergency indoor callers could materially enhance the ability of first responders to provide assistance and save lives.

Today's *Notice of Inquiry* also asks whether to extend 911 and E911 requirements beyond interconnected VoIP services, as defined by the Commission, to portable VoIP services and additional IP-based devices, services and applications. While these are important questions, I am cautious about the extent of the Commission's jurisdiction in this area.

I want to thank the staff of the Public Safety and Homeland Security Bureau for its work on this item. I look forward to working with my Commission colleagues on continuing to improve E911 public safety initiatives.

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<sup>182</sup> Stephen J. Blumberg & Julian V. Luke, *Wireless Substitution: Early Release of Estimates from the National Health Interview Survey, July-December 2009*, at 1 (May 12, 2010) National Center for Health Statistics, Centers for Disease Control and Prevention. (available at: <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200905.pdf>) (Last visited September 22, 2010).

<sup>183</sup> *Wireless Substitution: Early Release of Estimates from the National Health Interview Study*, *supra*, at 5.