APPENDIX B

Final Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),[1] an Initial Regulatory Flexibility Analysis (IRFA) was included in the *Notice of Proposed Rulemaking* in PS Docket No. 11-82 (*NPRM*).[2] 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.[3]

A. Need for, and Objectives of, the Final Rules

2. In this *Report and Order*, the Commission extends the Part 4 outage reporting requirements[4] to interconnected Voice over Internet Protocol (VoIP) service providers. Specifically, it:

- extends the Commission's mandatory outage reporting rules to facilities-based and non-facilities-based interconnected VoIP service providers, and applies the current Part 4 definition of "outage"[5] to outages of interconnected VoIP service, covering the complete loss of service and/or connectivity to customers;
- requires that such providers submit electronically a notification to the Commission within 240 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize, an outage of at least 30 minutes' duration that potentially affects a 9-1-1 special facility;
- requires any such providers submit an electronic notification within 24 hours of discovering that they have experienced an outage of at least 30 minutes duration that potentially affects at least 900,000 user minutes of interconnected VoIP service and results in complete loss of service; or potentially affects any special offices and facilities;
- clarifies that the Part 4 rules apply to new wireless technologies; and
- mandates that providers submit electronically a Final Communications Outage Report to the Commission not later than thirty days after discovering the outage.

3. The Commission is taking this action because collecting data on significant outages of interconnected VoIP services will help the Commission monitor compliance with the statutory 9-1-1 obligations of interconnected VoIP service providers[6] as well as help ensure the Nation's current and

[1] *See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601-12., 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).

[2] *See* Proposed Extension of Part 4 of the Commission's Rules Regarding Outage Reporting to Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers, PS Docket No. 11-82, *Notice of Proposed Rulemaking*, 26 FCC Rcd 7166, 7202 (2011) (*NPRM*).

[3] *See* 47 C.F.R. § 604.

[4] 47 C.F.R. Part 4.

[5] "Outage" is defined as a significant degradation in the ability of an end user to establish and maintain a channel of communications as a result of failure or degradation in the performance of a communication provider's network. *See* 47 C.F.R. § 4.5(a).

[6] Under the New and Emerging Technologies 911 (NET 911) Improvement Act of 2008, Pub. L. No. 110-283, 122 Stat. 2620 (2008) (amending Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, 113 Stat. 1286 (1999)), interconnected VoIP providers are required to provide 9-1-1 services to their subscribers. *See also* Implementation of the NET911 Improvement Act of 2008, *Report and Order*, 23 FCC Rcd 1154 (2008).

future 9-1-1 systems are as reliable and resilient as possible both on a day-to-day basis and in times of major emergency. Consumers increasingly are relying on Internet Protocol (IP)-based technologies as substitutes for communications services provided by older communications technologies, and increasingly use interconnected VoIP services in lieu of traditional telephone service. As of December 31, 2010, 31 percent of the more than 87 million residential telephone subscriptions in the United States were provided by interconnected VoIP providers[7]—an increase of 21 percent (from 22.4 million to 27.1 million) from the end of 2009;[8] additionally, the Commission estimates that approximately 31 percent of residential wireline 9-1-1 calls are made using VoIP service.

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

4. Three comments specifically addressed the proposed rules raised by the IRFA (*i.e.*, how the rules would impact small entities).[9] The Commission determined to extend the Part 4 network outage reporting rules to interconnected VoIP providers only at this time, obviating some of the broadband-related concerns raised by these commenters. Nevertheless, we consider the issues raised by the three commenters.

5. ACA notes that each new regulatory mandate imposes costs and each new mandate requiring reporting to the Commission affects small providers disproportionately;[10] significant difficulties will arise if smaller providers are called upon to determine whether some specific, quantifiable level of service is actually being received by their subscribers over their distribution networks for the purpose of outage reporting.[11] It urges that, if the Commission does, in fact, adopt rules extending the outage reporting requirement to interconnected VoIP providers, it must do so in a way that "even the smallest rural provider using existing technologies and network capabilities" can easily implement the reporting regime.[12] We agree with ACA, and adopt rules with which small providers can comply using existing technology.

6. The VON Coalition asks that the Commission completely decline to extend outage reporting requirements to VoIP providers. If the Commission decides to extend the rules, then the rules should be modified to require such providers to report only complete outages within the provider's control. Reporting criteria and timing also must be modified to account for the greater complexity of VoIP and the resources of small VoIP providers to allow additional time for reports and no financial penalties for missing deadlines.[13] In response, the Commission believes the cost of complying with the new rules will be relatively low, particularly in light of the benefit obtained from getting a complete picture of

[7] *See Local Telephone Competition: Status as of December 31, 2010*, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission (Oct. 2011), Figure 2 - Wireline Retail Local Telephone Service Connections by Technology and Customer Type as of December 31, 2010, http://transition.fcc.gov/Daily_Releases/Daily_Business/2011/db1007/DOC-310264A1.pdf (last visited Oct. 17, 2011).

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[9] *See* American Cable Association (ACA) Comments (filed Aug. 8, 2011); Voice on the Net Coalition (VON Coalition) Comments (filed Aug. 8, 2011); Wireless Internet Service Provider Association (WISPA) Comments (filed Aug. 8, 2011); *see also* ACA Reply Comments (filed Oct. 7, 2011); WISPA Reply Comments (filed Oct. 7, 2011).

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[10] ACA Comments at 6.

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interconnected VoIP network reliability. Further, by so significantly scaling back what rules it actually adopts (as opposed to what was proposed), the Commission believes it is being responsive regarding the effect of the rules on small providers. Having all VoIP providers, including small providers, report outages will help advance the Commission's goal of greater network reliability. Further, the Commission believes that, because every interconnected VoIP service provider has a competitive interest in providing reasonable network reliability to satisfy its customers, such a provider already tracks, in some manner, the type of information the Commission seeks, so collecting and reporting would not be an additional undue burden.

7. In urging that any rules adopted not unduly burden affect small providers, WISPA states that these providers do not routinely collect and monitor all of the types of information envisioned in the *NPRM,*[14] and that a "one-size-fits-all"[15] rule regarding quality metrics would disproportionately, and negatively, impact small providers.[16] WISPA would have small providers subject to outage reporting affecting a 9-1-1 facility, but would exempt them from the "30 minutes/900,000 user minutes" rule. WISPA believes this exemption will reduce the service provider's cost burden while also allowing the Commission to improve the resilience and reliability of the Nation's commercial and public safety communications infrastructure.[17] As noted immediately above, the Commission believes that interconnected VoIP service providers have a competitive interest in providing reasonable network reliability to satisfy its customers, and most likely already track, in some manner, the type of information the Commission seeks. We do not see this collecting and reporting, using existing technology, as an additional undue burden.

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

8. 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 rules adopted herein.[18] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[19] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[20] 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).[21]

1. Total Small Entities

9. *Small Businesses, Small Organizations, and Small Governmental Jurisdictions*. Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here,

[14] WISPA Comments at 3-4.

[15] WISPA Comments at 4.

[16] *Id.* at 4.

[17] *Id.* at 4-6.

[18] 5 U.S.C. § 603(b)(3).

[19] 5 U.S.C. § 601(6).

[20] 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 term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register."

[21] Small Business Act, 15 U.S.C. § 632.

at the outset, three comprehensive, statutory small entity size standards.[22] First, nationwide, there are a total of approximately 27.5 million small businesses, according to the SBA.[23] In addition, a "small organization" is generally "any not-for-profit enterprise which is independently owned and operated and is not dominant in its field."[24] Nationwide, as of 2007, there were approximately 1,621,315 small organizations.[25] Finally, 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."[26] Census Bureau data for 2011 indicate that there were 89,476 local governmental jurisdictions in the United States.[27] We estimate that, of this total, as many as 88, 506 entities may qualify as "small governmental jurisdictions."[28] Thus, we estimate that most governmental jurisdictions are small.

2. Interconnected VoIP and Broadband ISPs

10. *Internet Service Providers.* The 2007 Economic Census places these firms, the services of which might include Voice over Internet protocol (VoIP), in either of two categories, depending on whether the service is provided over the provider's own telecommunications facilities (*e.g.*, cable and DSL ISPs), or over client-supplied telecommunications connections (*e.g.*, dial-up ISPs). The former are within the category of Wired Telecommunications Carriers,[29] which has an SBA small business size standard of 1,500 or fewer employees.[30] These are also labeled "broadband." The latter are within the category of All Other Telecommunications,[31] which has a size standard of annual receipts of $25 million or less.[32] These are labeled non-broadband.

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[22] *See* 5 U.S.C. §§ 601(3)–(6).

[23] *See* SBA, Office of Advocacy, "Frequently Asked Questions," web.sba.gov/faqs (last visited May 6,2011; figures are from 2009).

[24] 5 U.S.C. § 601(4).

[25] INDEPENDENT SECTOR, THE NEW NONPROFIT ALMANAC & DESK REFERENCE (2010).

[26] 5 U.S.C. § 601(5).

[27] U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES: 2011, Table 427 (2007)

[28] The 2007 U.S Census data for small governmental organizations indicate that there were 89, 476 "Local Governments" in 2007. (U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES 2011, Table 428.) The criterion by which the size of such local governments is determined to be small is a population of 50,000. However, since the Census Bureau does not specifically apply that criterion, it cannot be determined with precision how many of such local governmental organizations is small. Nonetheless, the inference seems reasonable that substantial number of these governmental organizations has a population of less than 50, 000. To look at Table 428 in conjunction with a related set of data in Table 429 in the Census's Statistical Abstract of the U.S., that inference is further supported by the fact that in both Tables, many entities that may well be small are included in the 89,476 local governmental organizations, e.g. county, municipal, township and town, school district and special district entities. Measured by a criterion of a population of 50,000 many specific sub-entities in this category seem more likely than larger county-level governmental organizations to have small populations. Accordingly, of the 89,746 small governmental organizations identified in the 2007 Census, the Commission estimates that a substantial majority is small.

[29] *See* U.S. Census Bureau, 2007 NAICS Definitions, "517110 Wired Telecommunications Carriers," http://www.census.gov/naics/2007/def/ND517110.HTM#N517110 (last visited May 11, 2011).

[30] 13 C.F.R. § 121.201, NAICS code 517110.

[31] *See* U.S. Census Bureau, 2007 NAICS Definitions, "517919 All Other Telecommunications," http://www.census.gov/naics/2007/def/ND517919.HTM#N517919 (last visited May 11, 2011).

[32] 13 C.F.R. § 121.201, NAICS code 517919 (updated for inflation in 2008).

11. The most current Economic Census data for all such firms are 2007 data, which are detailed specifically for ISPs within the categories above. For the first category, the data show that 396 firms operated for the entire year, of which only 2 operated with more than 1,000 employees.[33] For the second category, the data show that 2,383 firms operated for the entire year.[34] Of those, only 37 had annual receipts of more than $25,499,999 per year. Consequently, we estimate that the majority of firms are small entities. To ensure that this IRFA describes the universe of small entities that our action might affect, we discuss different types of entities that might be currently providing interconnected VoIP service.

3. Wireline Providers

12. *Incumbent Local Exchange Carriers* (*Incumbent LECs*). Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent local exchange services. 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. Census Bureau data for 2007, which now supersede data from the 2002 Census, show that there were 3,188 firms in this category that operated for the entire year. Of this total, 3,144 had employment of 999 or fewer, and 44 firms had had employment of 1,000 employees or more. Thus under this category and the associated small business size standard, the majority of these incumbent local exchange service providers can be considered small.[35]

13. The Commission has included small incumbent 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."[36] 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.[37] The Commission has therefore included small incumbent LECs in this RFA analysis, although the Commission emphasizes that this RFA action has no effect on Commission analyses and determinations in other, non-RFA contexts.

14. *Interexchange Carriers*. Neither the Commission nor the SBA has developed a small business size standard specifically for providers of interexchange services. 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.[38] Census Bureau data for 2007, which now supersede data from the 2002 Census, show that there were 3,188 firms in this category that operated for the entire year. Of this total, 3,144 had employment of 999 or fewer, and 44 firms had had employment of 1,000 employees or more. Thus under this category and the associated small business size standard,

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[33] *See* U.S. Census Bureau, 2007 Economic Census, Subject Series: Information, "Establishment and Firm Size," NAICS code 5171103 (released Nov. 19, 2010) (employment size), http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-_skip=700&-ds_name=EC0751SSSZ5&-_lang=en (last visited May 11, 2011).

[34] *See* U.S. Census Bureau, 2007 Economic Census, Subject Series: Information, "Establishment and Firm Size," NAICS code 5179191 (released Nov. 19, 2010) (receipts size).

[35] *See* http://factfinder.census.gov/servlet/IBQTable?_bm=y&-fds_name=EC0700A1&-geo_id=&-_skip=600&-ds_name=EC0751SSSZ5&-_lang=en (last visited May 11, 2011).

[36] 5 U.S.C. § 601(3).

[37] Letter from Jere W. Glover, Chief Counsel for Advocacy, SBA, to William E. Kennard, Chairman, FCC (filed May 27, 1999). The Small Business Act contains a definition of "small business concern," which the RFA incorporates into its own definition of "small business." 15 U.S.C. § 632(a); 5 U.S.C. § 601(3). SBA regulations interpret "small business concern" to include the concept of dominance on a national basis. 13 C.F.R. § 121.102(b).

[38] 13 C.F.R. § 121.201, NAICS code 517110.

the Commission estimates that the majority of interexchange carriers are small entities that may be affected by our action today.[39]

15. Neither the Commission nor the SBA has developed a small business size standard specifically for operator 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.[40] According to Commission data, 33 carriers have reported that they are engaged in the provision of operator services. Of these, an estimated 31 have 1,500 or fewer employees and 2 have more than 1,500 employees.[41] Consequently, the Commission estimates that the majority of operator service providers are small entities that may be affected by our action today.

4. Wireless Providers – Fixed and Mobile

16. To the extent the wireless services listed below are used by wireless firms for VoIP services, the rules adopted today may have an impact on those small businesses as set forth above and further below. Accordingly, for those services subject to auctions, we note that, as a general matter, the number of winning bidders that claim to 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 and transfers or reportable eligibility events, unjust enrichment issues are implicated.

17. *Wireless Telecommunications Carriers (except Satellite).* Since 2007, the Census Bureau has placed wireless firms within this new, broad, economic census category.[42] Prior to that time, such firms were within the now-superseded categories of "Paging" and "Cellular and Other Wireless Telecommunications."[43] Under the present and prior categories, the SBA has deemed a wireless business to be small if it has 1,500 or fewer employees.[44] For the category of Wireless Telecommunications Carriers (except Satellite), Census data for 2007, which supersede data contained in the 2002 Census, show that there were 1,383 firms that operated that year.[45] Of those 1,383, 1,368 had fewer than 100 employees, and 15 firms had more than 100 employees. Thus under this category and the associated small business size standard, the majority of firms can be considered small. Similarly, according to Commission data, 413 carriers reported that they were engaged in the provision of wireless telephony, including cellular service, Personal Communications Service (PCS), and Specialized Mobile Radio (SMR) Telephony services.[46] Of these, an estimated 261 have 1,500 or fewer employees and 152 have

[39] *See* http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-_skip=600&-ds_name=EC0751SSSZ5&-_lang=en (last visited May 11, 2011).

[40] 13 C.F.R. § 121.201, NAICS code 517110.

[41] TRENDS IN TELEPHONE SERVICE, tbl. 5.3.

[42] *See* U.S. Census Bureau, 2007 NAICS Definitions, "Wireless Communications Carriers (Except Satellite), NAICS code 517210," http://www.census.gov/naics/2007/def/ND517210.HTM#N517210 (last visited May 11, 2011).

[43] *See* U.S. Census Bureau, 2002 NAICS Definitions, "517211 Paging," http://www.census.gov/epcd/naics02/def/NDEF517.HTM (last visited May 11, 2011); and also U.S. Census Bureau, 2002 NAICS Definitions, "517212 Cellular and Other Wireless Telecommunications," http://www.census.gov/epcd/naics02/def/NDEF517.HTM (last visited May 11, 2011).

[44] 13 C.F.R. § 121.201, NAICS code 517210 (2007 NAICS). The now-superseded, pre-2007 CFR citations were 13 C.F.R. § 121.201, NAICS codes 517211 and 517212 (referring to the 2002 NAICS).

[45] *See* U.S. Census Bureau, 2007 Economic Census, Sector 51, 2007 NAICS code 517210 (rel. Oct. 20, 2009), http://factfinder.census.gov/servlet/IBQTable?—bm=y&-geo—id=&-fds—name=EC0700A1&-—skip=700&-ds—name=EC0751SSSZ5&-—lang=en (last visited May 11, 2011).

[46] *See* Trends in Telephone Service at Table 5.3.

more than 1,500 employees.[47] Consequently, the Commission estimates that approximately half or more of these firms can be considered small. Thus, using available data, we estimate that the majority of wireless firms can be considered small.

18. *Wireless Communications Services*. This service can be used for fixed, mobile, radiolocation, and digital audio broadcasting satellite uses. 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.[48] The SBA has approved these definitions.[49] 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, seven bidders won 31 licenses that qualified as very small business entities, and one bidder won one license that qualified as a small business entity.

19. *1670–1675 MHz Services*. This service can be used for fixed and mobile uses, except aeronautical mobile.[50] An auction for one license in the 1670–1675 MHz band commenced on April 30, 2003 and closed the same day. One license was awarded. The winning bidder was not a small entity.

20. *Wireless Telephony*. Wireless telephony includes cellular, personal communications services, and specialized mobile radio telephony carriers. As noted, the SBA has developed a small business size standard for Wireless Telecommunications Carriers (except Satellite).[51] Under the SBA small business size standard, a business is small if it has 1,500 or fewer employees.[52] According to *Trends in Telephone Service* data, 413 carriers reported that they were engaged in wireless telephony.[53] Of these, an estimated 261 have 1,500 or fewer employees and 152 have more than 1,500 employees.[54] Therefore, more than half of these entities can be considered small.

21. *Specialized Mobile Radio Licenses.* 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.[55] 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.[56] The SBA has approved these small business size standards for the 900 MHz Service.[57] The Commission has held auctions for geographic area licenses in the 800 MHz and 900 MHz bands. The 900 MHz SMR auction began on December 5, 1995, and closed on April 15, 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 began on October 28, 1997, and was completed on

[47] *See id.*

[48] *Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service (WCS), Report and Order*, 12 FCC Rcd 10785, 10879, ¶ 194 (1997).

[49] *See* Letter from Aida Alvarez, Administrator, SBA, to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, FCC (filed Dec. 2, 1998) (*Alvarez Letter 1998*).

[50] 47 C.F.R. § 2.106; *see generally* 47 C.F.R. §§ 27.1–.70.

[51] 13 C.F.R. § 121.201, NAICS code 517210.

[52] *Id.*

[53] TRENDS IN TELEPHONE SERVICE, tbl. 5.3.

[54] *Id.*

[55] 47 C.F.R. § 90.814(b)(1).

[56] *Id.*

[57] *See* Letter from Aida Alvarez, Administrator, SBA, to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, FCC (filed Aug. 10, 1999) (*Alvarez Letter 1999*).

December 8, 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.[58] A second auction for the 800 MHz band was held on January 10, 2002 and closed on January 17, 2002 and included 23 BEA licenses. One bidder claiming small business status won five licenses.[59]

22. The auction of the 1,053 800 MHz SMR geographic area licenses for the General Category channels began on August 16, 2000, and was completed on September 1, 2000. Eleven bidders won 108 geographic area licenses for the General Category channels in the 800 MHz SMR band and qualified as small businesses under the $15 million size standard.[60] In an auction completed on December 5, 2000, a total of 2,800 Economic Area licenses in the lower 80 channels of the 800 MHz SMR service were awarded.[61] Of the 22 winning bidders, 19 claimed small business status and won 129 licenses. Thus, combining all four auctions, 41 winning bidders for geographic licenses in the 800 MHz SMR band claimed status as small businesses.

23. In addition, there are numerous incumbent site-by-site SMR licenses 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 service pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of no more than $15 million. In addition, we do not know how many of these firms have 1,500 or fewer employees, which is the SBA-determined size standard.[62] We assume, for purposes of this analysis, that all of the remaining extended implementation authorizations are held by small entities, as defined by the SBA.

24. *Lower 700 MHz Band Licenses*. The Commission previously adopted criteria for defining three groups of small businesses for purposes of determining their eligibility for special provisions such as bidding credits.[63] The Commission 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.[64] 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.[65] Additionally, the lower 700 MHz Service had a third category of small business status for Metropolitan/Rural Service Area (MSA/RSA) licenses—"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.[66] The SBA approved these small size standards.[67] 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 won by 102 winning bidders. Seventy-two of

[58] *See Correction to Public Notice DA 96-586 "FCC Announces Winning Bidders in the Auction of 1020 Licenses to Provide 900 MHz SMR in Major Trading Areas,"* Public Notice, 18 FCC Rcd 18367 (WTB 1996).

[59] *See Multi-Radio Service Auction Closes*, Public Notice, 17 FCC Rcd 1446 (WTB 2002).

[60] *See 800 MHz Specialized Mobile Radio (SMR) Service General Category (851–854 MHz) and Upper Band (861–865 MHz) Auction Closes; Winning Bidders Announced*, Public Notice, 15 FCC Rcd 17162 (2000).

[61] *See 800 MHz SMR Service Lower 80 Channels Auction Closes; Winning Bidders Announced*, Public Notice, 16 FCC Rcd 1736 (2000).

[62] *See generally* 13 C.F.R. § 121.201, NAICS code 517210.

[63] *See Reallocation and Service Rules for the 698–746 MHz Spectrum Band (Television Channels 52–59), Report and Order*, 17 FCC Rcd 1022 (2002) (*Channels 52–59 Report and Order*).

[64] *See Channels 52–59 Report and Order*, 17 FCC Rcd at 1087-88, ¶ 172.

[65] *See id.*

[66] *See id.*, 17 FCC Rcd at 1088, ¶. 173.

[67] *See Alvarez Letter 1999.*

the winning bidders claimed small business, very small business or entrepreneur status and won a total of 329 licenses.[68] A second auction commenced on May 28, 2003, closed on June 13, 2003, and included 256 licenses: 5 EAG licenses and 476 Cellular Market Area licenses.[69] Seventeen winning bidders claimed small or very small business status and won 60 licenses, and nine winning bidders claimed entrepreneur status and won 154 licenses.[70] On July 26, 2005, the Commission completed an auction of 5 licenses in the Lower 700 MHz band (Auction No. 60). There were three winning bidders for five licenses. All three winning bidders claimed small business status.

25. In 2007, the Commission reexamined its rules governing the 700 MHz band in the *700 MHz Second Report and Order.*[71] An auction of 700 MHz licenses commenced January 24, 2008 and closed on March 18, 2008, which included 176 Economic Area licenses in the A Block, 734 Cellular Market Area licenses in the B Block, and 176 EA licenses in the E Block.[72] Twenty winning bidders, claiming small business status (those with attributable average annual gross revenues that exceed $15 million and do not exceed $40 million for the preceding three years) won 49 licenses. Thirty three 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) won 325 licenses.

26. *Upper 700 MHz Band Licenses.* In the *700 MHz Second Report and Order*, the Commission revised its rules regarding Upper 700 MHz licenses.[73] 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.[74] 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.

27. *700 MHz Guard Band Licensees.* In 2000, 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.[75] 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.[76] 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.[77] SBA approval of these definitions is not required.[78] An auction of 52 Major Economic Area licenses commenced on September

[68] *See Lower 700 MHz Band Auction Closes*, Public Notice, 17 FCC Rcd 17272 (WTB 2002).

[69] *See Lower 700 MHz Band Auction Closes*, Public Notice, 18 FCC Rcd 11873 (WTB 2003).

[70] *See id.*

[71] *700 MHz Second Report and Order*, Second Report and Order, 22 FCC Rcd 15289, 15359 n. 434 (2007).

[72] *See Auction of 700 MHz Band Licenses Closes*, Public Notice, 23 FCC Rcd 4572 (WTB 2008).

[73] *700 MHz Second Report and Order*, 22 FCC Rcd 15289.

[74] *See Auction of 700 MHz Band Licenses Closes*, Public Notice, 23 FCC Rcd 4572 (WTB 2008).

[75] *See Service Rules for the 746–764 MHz Bands, and Revisions to Part 27 of the Commission's Rules*, Second Report and Order, 15 FCC Rcd 5299 (2000) (*746–764 MHz Band Second Report and Order*).

[76] *See 746–764 MHz Band Second Report and Order*, 15 FCC Rcd at 5343, para. 108.

[77] *See id.*

[78] *See id.* at 5343, para. 108 n.246 (for the 746–764 MHz and 776–794 MHz bands, the Commission is exempt from 15 U.S.C. § 632, which requires Federal agencies to obtain SBA approval before adopting small business size standards).

6, 2000, and closed on September 21, 2000.[79] 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 on February 13, 2001, and closed on February 21, 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.[80]

28. *Air-Ground Radiotelephone Service*. The Commission has previously used 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.[81] There are fewer than 10 licensees in the Air-Ground Radiotelephone Service, and under that definition, we estimate that almost all of them qualify as small entities under the SBA definition. For purposes of assigning Air-Ground Radiotelephone Service licenses through competitive bidding, the Commission has defined "small business" as an entity that, together with controlling interests and affiliates, has average annual gross revenues for the preceding three years not exceeding $40 million.[82] A "very small business" is defined as an entity that, together with controlling interests and affiliates, has average annual gross revenues for the preceding three years not exceeding $15 million.[83] These definitions were approved by the SBA.[84] In May 2006, the Commission completed an auction of nationwide commercial Air-Ground Radiotelephone Service licenses in the 800 MHz band (Auction No. 65). On June 2, 2006, the auction closed with two winning bidders winning two Air-Ground Radiotelephone Services licenses. Neither of the winning bidders claimed small business status.

29. 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 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.[85] In 2006, the Commission conducted its first auction of AWS-1 licenses.[86] In that initial AWS-1 auction, 31 winning bidders identified themselves as very small businesses.[87] Twenty-six of the winning bidders identified themselves as small businesses.[88] In a subsequent 2008 auction, the

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[79] *See 700 MHz Guard Bands Auction Closes: Winning Bidders Announced*, Public Notice, 15 FCC Rcd 18026 (WTB 2000).

[80] *See 700 MHz Guard Bands Auction Closes: Winning Bidders Announced*, Public Notice, 16 FCC Rcd 4590 (WTB 2001).

[81] 13 C.F.R. § 121.201, NAICS codes 517210.

[82] *Amendment of Part 22 of the Commission's Rules to Benefit the Consumers of Air-Ground Telecommunications Services et al.*, Order on Reconsideration and Report and Order, 20 FCC Rcd 19663, paras. 28–42 (2005).

[83] *Id.*

[84] *See* Letter from Hector V. Barreto, Administrator, SBA, to Gary D. Michaels, Deputy Chief, Auctions and Spectrum Access Division, Wireless Telecommunications Bureau, FCC (filed Sept. 19, 2005).

[85] *See* Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands, *Report and Order*, 18 FCC Rcd 25,162, App. B (2003), *modified by* Service Rules for Advanced Wireless Services In the 1.7 GHz and 2.1 GHz Bands, *Order on Reconsideration*, 20 FCC Rcd 14,058, App. C (2005).

[86] *See* "Auction of Advanced Wireless Services Licenses Scheduled for June 29, 2006; Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments and Other Procedures for Auction No. 66," AU Docket No. 06-30, *Public Notice*, 21 FCC Rcd 4562 (2006) ("*Auction 66 Procedures Public Notice*").

[87] *See* "Auction of Advanced Wireless Services Licenses Closes; Winning Bidders Announced for Auction No. 66," *Public Notice*, 21 FCC Rcd 10,521 (2006) ("*Auction 66 Closing Public Notice*").

[88] *See id.*

Commission offered 35 AWS-1 licenses.[89] Four winning bidders identified themselves as very small businesses, and three of the winning bidders identified themselves as a small business.[90]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 has proposed 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.[91]

30. *3650–3700 MHz band.* In March 2005, the Commission released a *Report and Order and Memorandum Opinion and Order* that provides for nationwide, non-exclusive licensing of terrestrial operations, utilizing contention-based technologies, in the 3650 MHz band (*i.e.*, 3650–3700 MHz).[92] As of April 2010, more than 1270 licenses have been granted and more than 7433 sites have been registered. The Commission has not developed a definition of small entities applicable to 3650–3700 MHz band nationwide, non-exclusive licensees. However, we estimate that the majority of these licensees are Internet Access Service Providers (ISPs) and that most of those licensees are small businesses.

31. *Fixed Microwave Services.* Microwave services include common carrier,[93] private-operational fixed,[94] and broadcast auxiliary radio services.[95] They also include the Local Multipoint Distribution Service (LMDS),[96] the Digital Electronic Message Service (DEMS),[97] and the 24 GHz Service,[98] where licensees can choose between common carrier and non-common carrier status.[99] The Commission has not yet defined a small business with respect to microwave services. For purposes of the IRFA, the Commission will use the SBA's definition applicable to Wireless Telecommunications Carriers (except satellite)—i.e., an entity with no more than 1,500 persons is considered small.[100] For the category

[89] *See AWS-1 and Broadband PCS Procedures Public Notice*, 23 FCC Rcd at 7499. Auction 78 also included an auction of broadband PCS licenses.

[90] *See* "Auction of AWS-1 and Broadband PCS Licenses Closes, Winning Bidders Announced for Auction 78, Down Payments Due September 9, 2008, FCC Forms 601 and 602 Due September 9, 2008, Final Payments Due September 23, 2008, Ten-Day Petition to Deny Period," *Public Notice*, 23 FCC Rcd 12,749 (2008).

[91] Service Rules for Advanced Wireless Services in the 1915–1920 MHz, 1995–2000 MHz, 2020–2025 MHz and 2175–2180 MHz Bands et al., *Notice of Proposed Rulemaking*, 19 FCC Rcd 19,263, App. B (2005); Service Rules for Advanced Wireless Services in the 2155–2175 MHz Band, *Notice of Proposed Rulemaking*, 22 FCC Rcd 17,035, App. (2007); Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band, *Further Notice of Proposed Rulemaking*, 23 FCC Rcd 9859, App. B (2008).

[92] The service is defined in section 90.1301 *et seq.* of the Commission's Rules, 47 C.F.R. § 90.1301 *et seq.*

[93] *See* 47 C.F.R. Part 101, Subparts C and I.

[94] *See* 47 C.F.R. Part 101, Subparts C and H.

[95] Auxiliary Microwave Service is governed by Part 74 of Title 47 of the Commission's Rules. *See* 47 C.F.R. Part 74. Available to licensees of broadcast stations and to broadcast and cable network entities, broadcast auxiliary microwave stations are used for relaying broadcast television signals from the studio to the transmitter, or between two points such as a main studio and an auxiliary studio. The service also includes mobile TV pickups, which relay signals from a remote location back to the studio.

[96] *See* 47 C.F.R. Part 101, Subpart L.

[97] *See* 47 C.F.R. Part 101, Subpart G.

[98] *See id.*

[99] *See* 47 C.F.R. §§ 101.533, 101.1017.

[100] 13 C.F.R. § 121.201, NAICS code 517210.

of Wireless Telecommunications Carriers (except Satellite), Census data for 2007, which supersede data contained in the 2002 Census, show that there were 1,383 firms that operated that year.[101] Of those 1,383, 1,368 had fewer than 100 employees, and 15 firms had more than 100 employees. Thus under this category and the associated small business size standard, the majority of firms can be considered small. The Commission notes that the number of firms does not necessarily track the number of licensees. The Commission estimates that virtually all of the Fixed Microwave licensees (excluding broadcast auxiliary licensees) would qualify as small entities under the SBA definition.

32. *Local Multipoint Distribution Service.* Local Multipoint Distribution Service (LMDS) is a fixed broadband point-to-multipoint microwave service that provides for two-way video telecommunications.[102] In the 1998 and 1999 LMDS auctions,[103] the Commission defined a small business as an entity that has annual average gross revenues of less than $40 million in the previous three calendar years.[104] Moreover, the Commission added an additional classification for a "very small business," which was defined as an entity that had annual average gross revenues of less than $15 million in the previous three calendar years.[105] These definitions of "small business" and "very small business" in the context of the LMDS auctions have been approved by the SBA.[106] In the first LMDS auction, 104 bidders won 864 licenses. Of the 104 auction winners, 93 claimed status as small or very small businesses. In the LMDS re-auction, 40 bidders won 161 licenses. Based on this information, the Commission believes that the number of small LMDS licenses will include the 93 winning bidders in the first auction and the 40 winning bidders in the re-auction, for a total of 133 small entity LMDS providers as defined by the SBA and the Commission's auction rules.

5. Satellite Service Providers

33. *Satellite Telecommunications Providers.* Two economic census categories address the satellite industry. The first category has a small business size standard of $15 million or less in average annual receipts, under SBA rules.[107] The second has a size standard of $25 million or less in annual receipts.[108]

34. 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."[109] Census Bureau data for 2007 show that 512 Satellite

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[101] *See* U.S. Census Bureau, 2007 Economic Census, Sector 51, 2007 NAICS code 517210 (rel. Oct. 20, 2009), http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-fds_name=EC0700A1&-_skip=700&-ds_name=EC0751SSSZ5&-_lang=en (last visited May 11, 2011).

[102] *See* Local Multipoint Distribution Service, *Second Report and Order*, 12 FCC Rcd 12545 (1997).

[103] The Commission has held two LMDS auctions: Auction 17 and Auction 23. Auction No. 17, the first LMDS auction, began on February 18, 1998, and closed on March 25, 1998. (104 bidders won 864 licenses.) Auction No. 23, the LMDS re-auction, began on April 27, 1999, and closed on May 12, 1999. (40 bidders won 161 licenses.)

[104] *See LMDS Order,* 12 FCC Rcd at 12545.

[105] *Id.*

[106] *See* Letter to Daniel Phythyon, Chief, Wireless Telecommunications Bureau (FCC) from A. Alvarez, Administrator, SBA (January 6, 1998).

[107] 13 C.F.R. § 121.201, NAICS code 517410.

[108] 13 C.F.R. § 121.201, NAICS code 517919.

[109] *See* U.S. Census Bureau, 2007 NAICS Definitions, "517410 Satellite Telecommunications.

[110] Of this total, 464 firms had annual receipts of under $10 million, and 18 firms had receipts of $10 million to $24,999,999.[111] Consequently, the Commission estimates that the majority of Satellite Telecommunications firms are small entities that might be affected by our action.

35. The second category, *i.e.*, "All Other Telecommunications" comprises "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. Establishments providing Internet services or Voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry."[112] For this category, Census Bureau data for 2007 show that there were a total of 2,383 firms that operated for the entire year.[113] Of this total, 2,346 firms had annual receipts of under $25 million and 37 firms had annual receipts of $25 million to $49, 999,999.[114] Consequently, the Commission estimates that the majority of All Other Telecommunications firms are small entities that might be affected by our action.

6. Cable Service Providers.

36. *Wired Telecommunications Carriers*. The 2007 North American Industry Classification System ("NAICS") defines "Wired Telecommunications Carriers" as follows: "This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services; wired (cable) audio and video programming distribution; and wired broadband Internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry."[115] The SBA has developed a small business size standard for wireline firms within the broad economic census category, "Wired Telecommunications Carriers."[116] Under this category, the SBA deems a wireline business to be small if it has 1,500 or fewer employees. Census data for 2007, which supersede data from the 2002 Census, show that 3,188 firms operated n 2007 as Wired Telecommunications Carriers. 3,144 had 1,000 or fewer employees, while 44 operated with more than 1,000 employees.[117]

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[110] *See* http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-_skip=900&-ds_name=EC0751SSSZ4&-_lang=en (last visited May 11, 2011).

[111] *Id.*

[112] *See* http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517919&search=2007%20NAICS%20Search (last visited May 11, 2011).

[113] *See* http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-_skip=900&-ds_name=EC0751SSSZ4&-_lang=en (last visited May 11, 2011).

[114] *See* http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-_skip=900&-ds_name=EC0751SSSZ4&-_lang=en (last visited May 11, 2011).

[115] *See* U.S. Census Bureau, 2007 NAICS Definitions, "517110 Wired Telecommunications Carriers," http://www.census.gov/naics/2007/def/ND517110.HTM#N517110 (last visited May 11, 2011).

[116] 13 C.F.R. § 121.201 (NAICS code 517110).

[117] *See* http://factfinder.census.gov/servlet/IBQTable?_bm=y&-geo_id=&-_skip=900&-ds_name=EC0751SSSZ4&-_lang=en (last visited May 11, 2011).

37. *Cable Companies and Systems.* The Commission has also developed its own small business size standards, for the purpose of cable rate regulation. Under the Commission's rules, a "small cable company" is one serving 400,000 or fewer subscribers nationwide.[118] Industry data indicate that all but ten cable operators nationwide are small under this size standard.[119] In addition, under the Commission's rules, a "small system" is a cable system serving 15,000 or fewer subscribers.[120] Industry data indicate that, of 6,101 systems nationwide, 4,410 systems have under 10,000 subscribers, and an additional 258 systems have 10,000-19,999 subscribers.[121] Thus, under this standard, most cable systems are small.

38. *Cable System Operators.* The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed $250,000,000."[122] The Commission has determined that an operator serving fewer than 677,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed $250 million in the aggregate.[123] Industry data indicate that, of 1,076 cable operators nationwide, all but ten are small under this size standard.[124] We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed $250 million,[125] and therefore we are unable to estimate more accurately the number of cable system operators that would qualify as small under this size standard.

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

39. The rules adopted in this *Report and Order* require interconnected VoIP providers to submit electronically a notification to the Commission within 240 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize, an outage of at least 30 minutes' duration that potentially affects a 9-1-1 special facility. The rules also require that such any such providers submit an electronic notification within 24 hours of discovering that they have experienced an outage of at least 30 minutes duration that potentially affects at least 900,000 user minutes of interconnected VoIP service and results in complete loss of service; or potentially affects any special offices and facilities. The rules require that providers submit electronically a Final Communications Outage Report to the Commission not later than thirty days after discovering the outage; and clarify that the Part 4 rules apply to new wireless technologies.

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[118] 47 C.F.R. § 76.901(e). The Commission determined that this size standard equates approximately to a size standard of $100 million or less in annual revenues. *Implementation of Sections of the 1992 Cable Act: Rate Regulation,* Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393, 7408 (1995).

[119] *See* BROADCASTING & CABLE YEARBOOK 2010 at C-2 (2009) (data current as of Dec. 2008).

[120] 47 C.F.R. § 76.901(c).

[121] *See* TELEVISION & CABLE FACTBOOK 2009 at F-2 (2009) (data current as of Oct. 2008). The data do not include 957 systems for which classifying data were not available.

[122] 47 U.S.C. § 543(m)(2); *see* 47 C.F.R. § 76.901(f) & nn. 1–3.

[123] 47 C.F.R. § 76.901(f); *see FCC Announces New Subscriber Count for the Definition of Small Cable Operator*, Public Notice, 16 FCC Rcd 2225 (Cable Services Bureau 2001).

[124] *See* BROADCASTING & CABLE YEARBOOK 2006, at A-8, C-2 (Harry A. Jessell ed., 2005) (data current as of June 30, 2005); TELEVISION & CABLE FACTBOOK 2006, at D-805 to D-1857 (Albert Warren ed., 2005).

[125] The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority's finding that the operator does not qualify as a small cable operator pursuant to § 76.901(f) of the Commission's rules. *See* 47 C.F.R. § 76.909(b).

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

40. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its final approach, which may include (among others) the following four alternatives: (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.[126]

41. The Commission considered two significant alternatives to the rules as adopted, for the benefit (*i.e.*, less compliance cost) of small business: (1) a small business exception, under which small business would ultimately need to comply with the rules, but on a more relaxed basis, with significantly more time to contact the Commission regarding on outage, and (2) a small business exemption, under which small businesses would be exempt completely from the rules, except with respect to outages of 30 minutes or more to Public Safety Answering Points (PSAPs) or special facilities. In considering these alternatives, the Commission was concerned about the compliance burden on small interconnected VoIP providers.

42. The Commission ultimately rejected these alternatives, and decided to make the rule generally applicable. The Commission's reasons were many. The rules proposed in the *NPRM*, in particular those related to broadband monitoring and quality of service metrics, may have created considerable administrative and logistic burden for all providers, and for small providers in particular. Instead of requiring a wide variety of outage information from broadband access, broadband backbone, and interconnected VoIP providers, the Commission is requiring limited information from interconnected VoIP providers only, which dramatically decreases compliance costs. Further, as noted throughout the *Report and Order*, the Commission believes all parties covered by these rules, including small businesses, already collect the information the Commission seeks, if only because it is in their own interest to know the circumstances of a significant network outage. In the Commission's view, establishing a generally-applicable reporting rule will promote both safety and network reliability; people and business that are customers of smaller VoIP providers are entitled to no less.

43. *Expected data collection costs*. The Commission believes that, because every interconnected VoIP service provider has a competitive interest in providing reasonable network reliability to satisfy their customers, such providers already track the type of information the Commission seeks this sort of information in some manner, and thus would not be an additional undue administrative burden. We note also that the configuration of VoIP service should already make this information available for all providers. End-user VoIP terminals are IP-enabled devices that run Simple Network Management Protocol (SNMP) with the associated Management Information Base (MIB). Thus, the Network Management System (NMS) of interconnected VoIP providers is able to auto-poll or execute a manual poll of a portion or all of its VoIP-enabled devices to determine connectivity.[127] The inability of a VoIP-enabled device to connect with its call management system (SIP proxy, Call Manager, etc.) prevents the end-user VoIP-enabled device from making a call, whether or not the end-user device has IP connectivity. This call management system is similar to SS7, where a similar failure would also prevent voice service. These types of failures, if large enough, would most certainly generate a "trouble ticket" or, for smaller incidents, register on similar systems that track outages and customer technical issues. Therefore, we

[126] 5 U.S.C. § 603(c).

[127] At the *FCC Workshop*, Mark Adams commented: "So, at a basic level, we obviously do device level monitoring, and based on the types of devices, we know generally -- not always, but generally -- is it completely service affecting, or is it going to result in some kind of degradation. So we do device level monitoring. We monitor our end points for on or off status right through the switches, and through our cable modems." Mark Adams, Executive Director, Technology Operations, Cox Communications, *FCC Workshop*, Transcript at 106.

conclude that interconnected VoIP service providers have a relatively low-cost ability to monitor VoIP-enabled end-user devices for connectivity. Additionally, we note that no commenter indicated it would need to purchase and install any additional equipment into its network to detect when a large number of VoIP customers are out of service.

44. *Expected data reporting costs.* Because service providers already have technical and competitive reasons to collect outage information in the normal course of business, the costs of compliance with a reporting requirement are essentially those of identifying those outages that meet the reporting threshold and reformatting and uploading that information into Network Outage Reporting System (NORS). The vast majority of interconnected VoIP customers are served by providers that already have years of experience filing outage reports in NORS with respect to other services. Starting with information in the record from parties with experience filing in NORS and extrapolating that to the total cost that industry will bear to start reporting significant interconnected VoIP outages in NORS, we estimate that *industry-wide* the total operating cost for reporting on interconnected VoIP outages and administering outage reporting programs likely is less than $1 million in the first year[128] and less than $500,000 per year thereafter for *all* the providers who will report.[129]

45. Finally, the Commission's experience suggests that few, if any, small interconnected VoIP providers will ever reach the threshold of experiencing an outage (as defined by the Part 4 rules, and as requiring notification to the Commission). Based on NORS reporting, only a handful of small entities ever have endured an outage that reaches the minimum "30 minutes/900,000 user minutes" threshold. Should such an outage befall a small provider, the benefit of providing various information on that outage would clearly outweigh whatever negligible burden might exist. While the burden of reporting may be small, the benefit of such reporting are nation-wide, by allowing the Commission to better understand the causes of network outages, and the steps that can be taken to prevent them.

[128] Commission staff estimate first-year costs to include one-time training costs of $416,000 to train approximately 300 new reporting entities (*i.e.*, 5 employees * 100 large service providers * 4 hours * $80/hour = $160,000 and 2 employees * 200 small service providers * 8 hours * $80/hrs = $256,000 for a total of $416,000 in first-year training costs) in addition to the annual cost to report outages and administer the outage reporting program. According to data received on Form 477, there are 466 companies providing interconnected VoIP service. Of those companies, staff estimates that at least one-third are already under obligation to report outages of legacy services under the existing Part 4 rules, and that therefore, approximately 300 providers of interconnected VoIP service will now be obligated to report outages that meet the thresholds of the new rule. Based on years of experience coordinating with reporting entities, Commission staff estimates that the largest companies train an average of five staff on outage reporting, and that smaller companies train up to two. In terms of the amount of training necessary, staff estimates that four hours of training will be required for staff in those companies that are already reporting outages of legacy services, and twice that amount will be required for companies that are new to outage reporting. Labor costs were assumed to be $80 per hour. As discussed below, the anticipated reporting costs are $450,000. Therefore, the anticipated first-year costs are $416,000 plus $450,000, or approximately $866,000.

[129] Commission staff estimates the annual outage reporting costs to be $450,000 (*i.e.*, $300 per report * 1,500 additional reports). Underlying this calculation is the comment of ATIS that one carrier has indicated its average labor costs associated solely with the preparation of outage reports is approximately $300 per report. *See* ATIS Comments at 7, n.9. With respect to the number of expected additional reports, staff extrapolated from several years of outage reporting data regarding wireline service outages (which are functionally equivalent to outages of interconnected VoIP services) and estimates that up to 1,500 additional outage reports per year might be filed for the entire interconnected VoIP industry. Thus, 1,500 reports * $300/report equals $450,000 annual cost for outage reporting.

APPENDIX C

Final Rules

For the reasons discussed in the preamble, the Federal Communications Commission amends Part 4 of Title 47 of the Code of Federal Regulations (C.F.R.) as follows:

PART 4 – DISRUPTIONS TO COMMUNICATIONS

GENERAL

The authority citation for Part 4 is amended to read as follows:

Authority: Sec. 5, 48 Stat. 1068, as amended; 47 U.S.C. 154, 155, 201, 251, 307, 316, 615a-1, 1302(a), and 1302(b).

1. Section 4.3 is amended by amending paragraph (f) and adding paragraphs (h), resulting in original paragraph (h) now numbered as paragraph (i), to read as follows:

§ 4.3 Communications providers covered by the requirements of this part.

* * * * *

(f) *Wireless service providers* include Commercial Mobile Radio Service communications providers that use cellular architecture and CMRS paging providers. *See* § 20.9 of this chapter for the definition of Commercial Mobile Radio Service. Also included are affiliated and non-affiliated entities that maintain or provide communications networks or services used by the provider in offering such communications.

* * * * *

(h) *Interconnected Voice over Internet Protocol (VoIP) providers* are providers of interconnected VoIP service. *See* § 9.3 of this chapter for the definition of interconnected VoIP service. Such providers may be facilities-based or non-facilities-based. Also included are affiliated and non-affiliated entities that maintain or provide communications networks or services used by the provider in offering such communications.

(i) *Exclusion of equipment manufacturers or vendors*. Excluded from the requirements of this Part 4 are those equipment manufacturers or vendors that do not maintain or provide communications networks or services used by communications providers in offering communications.

2. Section 4.7 is amended by changing paragraph (e) as follows:

§ 4.7 Definitions of metrics used to determine the general outage-reporting threshold

criteria.

* * * * *

(e) "User minutes" are defined as:

(1) Assigned telephone number minutes (as defined in paragraph (c) of this section), for telephony, including non-mobile interconnected VoIP telephony, and for those paging networks in which each individual user is assigned a telephone number;

(2) The mathematical result of multiplying the duration of an outage, expressed in minutes, by the number of end users potentially affected by the outage, for all other forms of communications. For wireless service providers and interconnected VoIP service providers to mobile users, the number of potentially affected users should be determined by multiplying the simultaneous call capacity of the affected equipment by a concentration ratio of 8.

* * * * *

3. Section 4.9 is amended by adding paragraphs (g) to read as follows

§ 4.9 Outage reporting requirements – threshold criteria.

* * * * *

(g) Interconnected VoIP Service Providers. All interconnected VoIP service providers shall submit electronically a Notification to the Commission:

(1) within 240 minutes of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize, an outage of at least 30 minutes duration that potentially affects a 9-1-1 special facility (as defined in (e) of § 4.5), in which case they also shall notify, as soon as possible by telephone or other electronic means, any official who has been designated by the management of the affected 9-1-1 facility as the provider's contact person for communications outages at that facility, and the provider shall convey to that person all available information that may be useful to the management of the affected facility in mitigating the effects of the outage on efforts to communicate with that facility; or

(2) within 24 hours of discovering that they have experienced on any facilities that they own, operate, lease, or otherwise utilize, an outage of at least 30 minutes duration:

(a) That potentially affects at least 900,000 user minutes of interconnected VoIP service and results in complete loss of service; or

(b) That potentially affects any special offices and facilities (in accordance with paragraphs (a)-(d) of § 4.5).

Not later than thirty days after discovering the outage, the provider shall submit electronically a Final Communications Outage Report to the Commission. The Notification and Final reports shall comply with all of the requirements of § 4.11.

STATEMENT OF
CHAIRMAN JULIUS GENACHOWSKI

Re: *Proposed Extension of Part Four of the Commission's Rules Regarding Outage Reporting To Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers*, PS Docket No. 11-82

With today's action, the FCC is helping ensure that our communications infrastructure is more resilient. We are helping ensure that consumers will have access to reliable phone service, particularly when calling 9-1-1, whether they are using a traditional telephone or one that operates by interconnected VoIP service.

Public safety is a core mission for the agency. As part of that charge, the FCC has a statutory obligation to ensure the public can make emergency calls, particularly when facing life-threatening situations.

We are working to improve 9-1-1 service and reliability on several fronts. Last year, we laid out a five-point action plan on the transition to Next Generation 9-1-1, which we continue to work on. The plan calls for (1) development of location accuracy mechanisms for NG9-1-1, (2) enabling consumers to send text, photos, and videos to 9-1-1 call centers, (3) facilitating the completion and implementation of NG911 technical standards, (4) developing an NG9-1-1 governance framework, and (5) developing an NG911 funding model. The Plan will increase public access to 9-1-1, provide enhanced information to first responders, and increase the reliability of 9-1-1 networks. As part of that plan, we have launched a proceeding to accelerate the development and deployment of Next Generation 9-1-1, and we have tasked our Communications Security, Reliability, and Interoperability Council advisory committee to make recommendations on incorporating new technologies into the 9-1-1 system.

The action we take today is part of this broader effort. Since its creation in 2005, the FCC's current network outage reporting system – or NORS – has resulted in demonstrably higher reliability for our 9-1-1 system.

The outage data the FCC receives is analyzed and helps us spot trends and patterns that can affect all carriers and networks. The FCC works with the carriers based on actual data to improve day-to-day reliability, resulting in a more resilient communications infrastructure during emergencies.

But the existing Part 4 Outage Reporting rules apply only to legacy communications systems, not to outages occurring over interconnected VoIP services. As a result, during emergencies like Hurricane Irene this past summer, the Commission has not had the information it needs to analyze major outages of interconnected VoIP service.

This is a glaring gap that I'm pleased we are closing today. Approximately 31% of U.S. wireline consumers currently use VoIP as their residential phone service, and the number of VoIP users is only growing. If you need to call 9-1-1, it shouldn't matter who provides your telephone service.

Since public safety is a core mission of the FCC, we will continue to be vigilant to ensure reliability as communications technologies develop. For example, we intend to work with Internet Service Providers on mechanisms for voluntary reporting of broadband outages.

I want to take this opportunity to thank the public safety officials, carriers, cable systems and communications providers who worked with us on this important step to promote communications network reliability and ensure that the 9-1-1 system is secure and robust. I recognize that this requires a commitment on your part, and I appreciate your partnership in this effort.

I also want to thank the staff of our Public Safety and Homeland Security Bureau for their superb work on this item.

STATEMENT OF
COMMISSIONER ROBERT M. McDOWELL

Re: *Proposed Extension of Part Four of the Commission's Rules Regarding Outage Reporting To Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers*, PS Docket No. 11-82

Today, the FCC acts to collect important data regarding service outages experienced by interconnected Voice over Internet Protocol (VoIP) providers and, more importantly, their customers. My colleagues and I agree on the vital importance of voice calls, especially those to 9-1-1. All Americans rightly expect their emergency calls to go through even though most may not be aware of the technologies involved, how the systems operate or their regulatory treatment. I am grateful to all of the commenters for sharing their important insights and marketplace experiences regarding network outage reporting in response to last year's notice of proposed rulemaking.

Given its narrow scope, I am voting to approve today's order. Although our notice of proposed rulemaking discussed an array of regulatory mandates, today we adopt reporting requirements *only* in instances of a complete loss of interconnected VoIP service. There is a longstanding recognition that ensuring clear and effective communications in times of emergency is a key aspect of the Commission's mission. Collecting data on significant outages from VoIP providers will help the Commission in its duty to ensure the reliability and resiliency of our nation's 9-1-1 voice systems, consistent with Congress's mandate set forth in Section 615a-1 of the Communications Act. Moreover, in the reporting context, we put VoIP providers on par with wireline and wireless voice service providers, who already submit this information to the Commission and have for some time.

It is important to emphasize that we are *not* imposing these rules on broadband service providers, whether wireline or wireless. As I have stated many times before, the Commission does not have the legal authority to regulate broadband in such a way. I thank the Chairman for his willingness to accept edits to provide greater clarity regarding the narrow scope of the rules we adopt today, as well as to curtail the possibility of broadening their applicability. I have every confidence that industry will continue to work with the Commission on network outage matters for the benefit of protecting the safety and security of the American people.

As always, I thank the folks in the Public Safety and Homeland Security Bureau for your diligence and thoughtful work.

STATEMENT OF
COMMISSIONER MIGNON L. CLYBURN

Re: *Proposed Extension of Part Four of the Commission's Rules Regarding Outage Reporting To Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers*, PS Docket No. 11-82

With today's Order, the Commission takes an important step to improve the reliability of an advanced communications network that has, over the past few years, become increasingly popular. In 2008, Congress believed that Voice over Internet Protocol service was becoming such an integral part of the nation's communications infrastructure that it passed the NET-9-1-1 Act. This federal law states that "it shall be the duty of each IP-enabled voice service provider to provide 9-1-1 service and enhanced 9-1-1 service to its subscribers." The NET-9-1-1 Act also required VoIP service providers to comply with any rule changes the FCC might adopt for this 9-1-1 service.

Developments, since the enactment of this statute, underscore how important it is that Americans have the ability to make 9-1-1 calls through interconnected VoIP networks. As of December 2010, almost 32 million American households and businesses have interconnected VoIP subscriptions. That number represents an increase of 46 percent between December 2008 and December 2010. However, over the past two years, there have been a number of news reports of lengthy VoIP outages. In one case, a carrier experienced an outage where more than one million customers lost interconnected VoIP service for over four hours.

The President has assigned the FCC the mission essential function of ensuring continuous operation of critical communications services. So when the FCC hears news reports about VoIP service outages, it is incumbent upon the Commission to do everything in its power, to prevent such outages in the future.

As the item explains, the Commission has been able to improve the emergency readiness of traditional services such as: voice and paging services over wire line, wireless, cable, and satellite networks. And, it has been able to make these improvements through a light regulatory touch. By that, I mean, the Commission uses outage reporting requirements to facilitate the development and use of voluntary best practices, instead of relying on measures such as mandating specific levels of performance. What we are doing, today, is applying the same regulatory light touch to improving the reliability of interconnected VoIP services.

I also agree with the item's decision not to impose reporting requirements for outages of broadband Internet service. Although the NPRM proposed such requirements, the record in response revealed technical issues that the staff must study before imposing reporting requirements on this service. I am encouraged, however, that the record also reveals a willingness of the industry to participate in a voluntary process to help the Commission study these technical issues.

As I have said, before, collaboration by all stake holders is the best approach to address difficult issues. We have seen this approach work well in other public safety contexts such as E-9-1-1 location accuracy requirements for wireless service providers. Today is another example of this successful approach. I thank the various stakeholders who have worked with the staff of the Public Safety and Homeland Security Bureau to arrive at the rules we adopt today. The collaboration and input from VoIP service providers, state and local governments, and others, such as my former colleagues at NARUC, enabled the Commission to arrive at important reporting requirements that are not burdensome.

I commend Chairman Genachowski and Admiral Jamie Barnett for their leadership in this important proceeding.