Association") reports that operators had launched more than 105 commercial WCDMA networks across fifty countries as of May 2006 [537] GSM Association also reports that WCDMA networks had attracted 62 7 million subscribers worldwide by the first quarter of 2006, up from 16 3 million at the end of 2004 and 2 8 million at the end of 2003 [538] This compares with 23 9 million subscribers on CDMA 1xEV-DO networks in the first quarter of 2006, up from 12 3 million at the end of 2004 and 4 6 million at the end of 2003 [539]

201 Although the European Commission had originally targeted the beginning of 2002 as the date for the coordinated introduction of 3G services, most European carriers delayed the launch of commercial WCDMA service until 2004 [540] As of September 2005, operators had commercially launched 46 WCDMA networks in sixteen Western European markets, up from 40 networks in sixteen markets at the end of 2004, and ten networks in six markets at the end of 2003 [541] GSM Association reports that WCDMA networks served 32 145 million subscribers in Western Europe in the first quarter of 2006, up from 7 7 million at the end of 2004 [542] Based on surveys of mobile subscribers in the U K , Germany, and the United States, M Metrics estimates that the percentage of mobile subscribers on 3G networks at the end of 2005 was highest in the U K at 7 7 percent, followed by Germany (3 2 percent) and the United States (1 9 percent) [543] Survey results also indicate that subscribers to 3G services in the U K and Germany are significantly more likely to use mobile data services than their counterparts on 2G networks In addition to higher rates of SMS, instant messaging, and purchasing games and ringtones, 3G subscribers are far more likely to use multimedia applications that benefit from the superior transmission capabilities of 3G networks, such as capturing videos, sending videos to another user's handset, and viewing short video clips [544]

202 Although early 3G licensing gave European operators a head start in the deployment of WCDMA networks, *Wall Street Journal* personal technology columnist Walt Mossberg argues that the superior next-generation technologies deployed by U S wireless carriers have given the United States an edge over Europe in wireless data networks for the first time in years [545] In particular, speeds on the EV-DO networks deployed by Verizon Wireless, Sprint Nextel, and other U S CDMA carriers are much faster than the speeds on European WCDMA networks [546] Moreover, in December 2005, U S operator Cingular became the first carrier in the world to launch a commercial WCDMA/HSDPA network, which

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[537] *Global Momentum for High-Speed Mobile Broadband Accelerates on an Unprecedented Scale*, GSM Association, Press Release, May 5, 2006

[538] GSM Association, *GSM Subscriber Statistics Q1 2006* (visited May 8, 2006) <http://www gsmworld com> ("*GSM Subscriber Statistics Q1 2006*")

[539] *Id*

[540] *See Ninth Report*, at 20681

[541] Peter Rysavy, *Data Capabilities GPRS to HSDPA and Beyond*, White Paper Developed for 3G Americas, Rysavy Research, Sept 2005, at 52-53

[542] *GSM Subscriber Statistics Q1 2006*

[543] *European 3G Users Embracing New Multimedia Mobile Culture*, Press Release, M Metrics, Feb 7, 2006

[544] *Id*

[545] Walter S Mossberg, *Cingular Joins Rivals With Fast Reliable Wireless Broadband*, WALL STREET JOURNAL, Jan 19, 2006, p A9

[546] *Id*

also provides much faster speeds than Europe's WCDMA networks [547] Europe then followed, with a handful of Western European 3G operators beginning to upgrade their WCDMA networks by deploying HSDPA in the first half of 2006 [548] The advantages of technological competition over standardization may account for the ability of U S carriers to leapfrog their European counterparts As noted above, Cingular decided to deploy WCDMA with HSDPA to compete with Verizon Wireless's EV-DO network because the latter offers faster speeds than WCDMA alone [549] In contrast, with all competing carriers using the same technology, European carriers may be under less pressure to upgrade, knowing that a competitor's early lead will not be insurmountable [550]

203 Japan's NTT DoCoMo launched the world's first commercial 3G service over a WCDMA network in October 2001 [551] NTT DoCoMo's WCDMA service, which the company calls FOMA (Freedom of Multimedia Access), had more than 23 4 million subscribers as of the end of March 2006, nearly double the number of subscribers at the end of April 2005 [552] In January 2006, FOMA overtook and surpassed rival Japanese carrier KDDI's CDMA2000 service, which had nearly 22 million subscribers at the end of March 2006 [553] However, KDDI has migrated more than 96 percent of its subscribers to its CDMA2000 service, whereas FOMA accounts for less than 50 percent of NTT DoCoMo's subscriber base Data services offered over next-generation CDMA networks continue to be popular with consumers in Korea South Korea had accumulated more than 36 7 million CDMA2000 subscribers, representing nearly 96 percent of its total mobile telephone subscriber base, through March 2006, over 13 million of which are on CDMA2000 1xEV-DO networks [554]

## VII INTERMODAL ISSUES

### A Wireless – Wireline Competition

204 Once solely a business tool, wireless phones are now a mass-market consumer device [555] As the chief operating officer of Sprint Nextel recently noted, "there are only three forgotten things consumers will return home for a cellphone, a wallet or purse and keys "[556] The overall wireless penetration rate in the United States is now at 71 percent, [557] and virtually everyone in the United States

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[547] *Id See, also, North American 3G*, at 4

[548] *3G Operators* 3G TODAY (visited May 8, 2006) <http //www 3gtoday com>

[549] *See* Section IV B 1 C, Technology Choices and Upgrades of Mobile Telephone Carriers, *supra*

[550] Simon Flannery *et al* , *3G Economics a Cause for Concern*, Morgan Stanley, Equity Research, Feb 1, 2005, at 11

[551] *Ninth Report*, at 20681

[552] Telecommunications Carriers Association ("TCA"), *Number of Subscribers* (visited May 8, 2006) <http://www tca or jp/eng/database/daisu/index html>

[553] *Id*

[554] *3G Subscribers*, 3G TODAY (visited May 8, 2004) <http //www 3gtoday com>

[555] *See Sixth Report*, at 13381 One analyst estimated that, in 2004, only 25 percent of wireless users were business customers, with the remaining 75 percent being consumers *10-Year Wireless Projections*, KAGAN WIRELESS TELECOM INVESTOR, June 6, 2005, at 2

[556] Roger Cheng, *Telecom Companies Pin Hopes On Developing Mobile Commerce*, WALL STREET JOURNAL, Apr 17, 2006, at B6

[557] *See* Section VI B 1, Subscriber Growth, *supra*

between the ages of 20 and 49 has a wireless phone [558] NTT DoCoMo Inc 's Chief Executive has said, "[Cellphones are] already evolving as a multifunctional tool for everyday life "[559]

### 1 Wireless Substitution

205 While exact percentages are difficult to determine, wireless substitution has grown significantly in recent years According to the 2005 National Health Interview Survey (NHIS), 7 8 percent of adults lived in households with only wireless phones in the second half of 2005, up from 5 5 percent in the second half of 2004, and 3 5 percent in the second half of 2003 [560] Similarly, based on a survey conducted in the fourth quarter of 2005, one analyst found that about 8 percent of U S households that subscribe to cellphone service had given up their landline phones, up from 5 percent in 2004 and 4 percent in 2003 [561] The analyst observed, "[h]ouseholds are ditching home wired phones faster because cellphone service is getting cheaper, wireless coverage is improving and fewer people need their land lines for access to the Internet "[562] Moreover, the survey found that more than six million households, and nearly 6 percent of the total U S population, rely exclusively on wireless phones [563] Another survey from early 2006 found that 12 percent of cellphone users use cellphones as their only phone [564] A fourth survey from October 2005 found that nearly one in five consumers who recently purchased mobile phones said they had no landline service [565]

206 Even when not "cutting the cord" completely, consumers increasingly are choosing wireless service over traditional wireline service, particularly for certain uses For example, according to one analyst, customers in nearly a third of American households make at least half their long-distance calls at home from their cell phones rather than from their landlines [566] In the early 2006 survey of cellphone users described above, an additional 42 percent of cellphone users said that they also had a landline phone, but that they used their cellphones "most "[567]

207 These trends appear to be due to the relatively low cost, widespread availability, and

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[558] Simon Flannery *et al* , *Deteriorating Wireless Trends*, Morgan Stanley, Equity Research, Jan 9, 2006, at 7 The authors add, "the inescapable conclusion is that the population aged 20-69 must be highly penetrated "

[559] Roger Cheng, *Telecom Companies Pin Hopes On Developing Mobile Commerce*, WALL STREET JOURNAL, Apr 17, 2006, at B6

[560] Stephen J Blumberg, Ph D and Julian V Luke, *Wireless Substitution Preliminary Data from the 2005 National Health Interview Survey*, National Center for Health Statistics, Centers for Disease Control, available at <http://www cdc gov/nchs/products/pubs/pubd/hestats/wireless/wireless2005 htm> (visited May 15, 2006)

[561] Li Yuan, *More U S Households Are Ditching Landline Phones for Wireless*, WALL STREET JOURNAL, Mar 31, 2006, at A12 (citing a survey by Forrester Research Inc )

[562] *Id*

[563] *Id*

[564] *Id* (citing a survey by the NPD Group) Another 42 percent said that they also had a landline phone, but they used their cellphones "most " Only 43 percent said they still used their landline phones as the primary phone *Id*

[565] *Nearly One in Five Wireless Service Buyers Report No Landline Service, Survey Says*, TRDAILY, Dec 6, 2005 (citing a survey by the Consumer Electronics Association)

[566] Sebastian Rupley, *The Cellular Home*, PC MAGAZINE, Aug 16, 2005

[567] Only 43 percent said they still used their landline phones as the primary phone Li Yuan, *More U S Households Are Ditching Landline Phones for Wireless*, WALL STREET JOURNAL, Mar 31, 2006, at A12 (citing a survey by the NPD Group) Another 42 percent said that they also had a landline phone, but they used their cellphones "most " *Id*

increased use of wireless service As we discussed in past reports, a number of analysts have argued that wireless service is competitive or cheaper than wireline, particularly if one is making a long-distance call or when traveling [568] As one analyst wrote, "[a]t currently effective yields, we continue to believe wireless pricing is competitive with traditional wireline pricing (especially relative to long-distance calling) Lower yields, combined with the convenience of mobility, should continue to drive wireline displacement "[569]

### 2 Wireless Alternatives

208 A number of mobile wireless carriers offer service plans designed to compete directly with wireline local telephone service These plans offer unlimited local calling for around $30 to $40 a month The two largest such providers, Leap, under its "Cricket" brand, and MetroPCS, served a combined total of 3 7 million customers at the end of 2005 [570] Leap offers service in 41 markets in 20 states, [571] while MetroPCS offers service in certain major metropolitan areas in California, Florida, Georgia, Texas, and Michigan [572]

209 In addition to unlimited local wireless calling plans, the nationwide carriers offer plans that offer large buckets of minutes, with around 1,000 "anytime" minutes and unlimited night and weekend minutes (some with free "in-network" calling), for around $50-$60 per month [573]

## B Wireless Local Area Networks

210 Wireless Local Area Networks (WLANs) and Wireless Metropolitan Area Networks (WMANs) are playing an increasingly important role as a competitor and supplement to the services offered by the CMRS industry [574] WLANs are already widely deployed and enable consumers to obtain high-speed wireless Internet connections within a range of 150 to 250 feet from a wireless access point (AP) [575] The most prevalent WLAN technology is equipment manufactured in accordance with the IEEE 802 11 family of standards, commonly known as "Wi-Fi," short for wireless fidelity Basic WLAN data

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[568] *See Eighth Report*, at 14832-14833; *Ninth Report*, at 20684-20685; *Tenth Report*, at 15980

[569] *4Q05 Wireless 411*, at 55

[570] *Leap Reports Results for Fourth Quarter and Full Year 2005*, News Release, Leap, Mar 16, 2006; *MetroPCS Reaches Two Million Customers on Four Year Anniversary of Service*, News Release, MetroPCS, Feb 7, 2006 (as of February 2006)

[571] *See* Cricket, *View Coverage Maps* (visited May 3, 2006) <http://www mycricket com/coverage/>

[572] *See* MetroPCS, *Find Your Coverage Area* (visited May 3, 2006) <http //www metropcs com/coverage/coveragеareas php?currentNav=none >

[573] *See*, e g ,T-Mobile, *All Plans* (visited May 3, 2006) < http://www t-mobile com/>, Cingular, *Rate Plans* (visited May 23, 2006) < http://www cingular com/>, Verizon Wireless, *America's Choice* (visited May 3, 2006) <http //www verizonwireless com/ >, and, Sprint Nextel, *Planes for Sprint PCS Phones* (visited May 3, 2006) <http //www sprint com/> *See, also*, Tim Horan, *Datatimes*, CIBC World Markets, May 3, 2006 ("By comparison, the larger national carriers offer 1,000 minutes for between $50-$56 per month and 2,000-2,500 for $100 per month, but do not offer data services in those plans") In addition, T-Mobile offers regional plans with 3,000 "Whenever" minutes for $50 a month T-Mobile, *All Plans* (visited May 8, 2006) < http://www t-mobile com/>

[574] Services provided over WLANs are not CMRS services *See* 47 C F R §§ 20 3, 20 9 for a discussion of commercial mobile radio services WLANs are permitted to operate on an unlicensed basis under Part 15 of the FCC's rules *See* 47 C F R §15, et seq

[575] Kenneth R Carter, Ahmed Lahjouji, and Neal McNeal, Unlicensed and Unshackled A Joint OSP-OET White Paper on Unlicensed Devices and Their Regulatory Issues, OSP Working Paper #39, May 2003, at 28-29 ("*OSP-OET White Paper*")

transfer rates range from speeds of up to 11 Mbps for 802 11b and up to 54 Mbps for 802 11a and 802 11g New "SpeedBoost" or "Super G" routers, marketed as "pre-802 11n," employ MIMO (Multiple Input Multiple Output) technology, making them capable of providing speeds from 108 to 240 Mbps The 802 11n standard did not receive enough support to be ratified as an official standard by IEEE in the latest round of voting in November 2005 After modification, the revised 802 11n specification will be reconsidered

211 WLAN users often access high-speed Internet connections at so-called "hot spots," including locations such as restaurants, coffee shops, hotels, airports, convention centers, and city parks [576] Estimates on the number of public Wi-Fi hot spots vary considerably Wi-Fi411 estimates there are 13,178 public Wi-Fi hot spots in the United States [577] However, Intel's web site counts 39,951 Wi-Fi locations in United States [578] The Telecommunications Industry Association (TIA) cites data that places the number of hot spots in the United States at 39,200 in 2005 [579] In addition to public hot spots, WLANs are also proliferating in homes and businesses As users contract for wired broadband services for their home or business, they find that the "plug and play" wireless local area network extendibility made possible by devices from companies like Linksys and Netgear both affordable and convenient

212 As noted in the *Ninth Report*, several mobile telephone carriers have entered the hot spot operation business through acquisitions, partnerships, or independent deployments [580] Generally, mobile telephone carriers offer WLAN services to augment their voice service offerings with data access [581] Subscribers to carriers' WLAN services may choose from a wide range of service plans including annual access, month-to-month access, daily access, and metered access [582] In the past year mobile carriers continued to extend their Wi-Fi coverage by entering into agreements with other carriers T-Mobile now claims 7,661 hotspots where its customers can get connectivity [583]

## VIII CONCLUSION

213 Even with one less nationwide mobile telephone carrier to choose from, U S consumers continue to benefit from robust competition in the CMRS marketplace During 2005, the CMRS industry experienced another year of strong growth, demonstrating the continuing demand for and reliance upon mobile services As of December 2005, we estimate there were approximately 213 million mobile telephone subscribers, which translates into a nationwide penetration rate of roughly 71 percent [584] Consumers continue to increase their use of mobile telephones for both voice and data services Partly because of the prevalence of mobile service packages with large buckets of inexpensive minutes, the

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[576] *See Seventh Report*, at 13062-13063 Hot spots typically rely on high-speed landline technologies, such as T-1 lines, DSL, or cable modems, to connect to the PSTN and Internet

[577] *See* <http //www wifi411 com/> (visited May 18, 2006)

[578] *See* <http //intel jiwire com/hot-spot-directory-browse-by-state htm?country_id=1> (visited May 18, 2006)

[579] *TIA's 2006 Telecommunications Market Review and Forecast* at 190

[580] *Ninth Report*, at 20687

[581] *See Tenth Report*, at 15983

[582] *See, for example*, Sprint PCS, *PCS for Business Voice and Data* (visited May 18, 2006) <https //wifi sprintpcs com/signup/terms aspx>, T-Mobile, *T-Mobile Hotspot Service Plans* (visited May 18, 2006) <https //selfcare hotspot t-mobile com/////services_plans do>

[583] *See, for example*, T-Mobile, *T-Mobile Hotspot U S Location Map* (visited May 18, 2006) <http //locations hotspot t-mobile com/>

[584] *See* Section, Section VI B 1, Subscriber Growth, *supra*

average amount of time U S mobile subscribers spend talking on their mobile phones rose to 740 minutes per month in the second half of 2005, an increase of more than two hours from a year earlier and more than quadruple the average usage of mobile subscribers in Western Europe and Japan [585] Survey evidence also indicates that U S mobile subscribers have experienced an improvement in call quality in the past year Moreover, although U S mobile subscribers still prefer to use their mobile phones to talk rather than to send text messages, they sent more than 48 billion text messages in the second half of 2005, nearly double the volume of text messages in the same period of 2004 [586] Relatively low prices on mobile voice and data services appear to have been a key factor stimulating subscriber growth and usage While only two of three different indicators of mobile pricing showed a continued decline in the cost of mobile service in 2005,[587] mobile telephone service in the United States remains relatively inexpensive on a per minute basis compared with that in Western Europe [588]

214 In addition to the indicators of mobile market performance cited in the preceding paragraph, a wide variety of indicators of carrier conduct and market structure also show that competition in mobile telecommunications markets is robust For example, mobile telephone providers continued to build out their networks and expand service availability during 2005 [589] Carriers also continued to deploy networks based on CDMA2000 1xEV-DO or WCDMA/HSDPA technologies that allow them to offer mobile Internet access services for mobile telephone handsets, PDAs, and laptops at speeds comparable to what many users get from fixed broadband connections such as DSL With respect to market structure, the merger of Sprint and Nextel has resulted in a decline in the number of nationwide carriers from five to four [590] Due largely to this transaction, there was a decline in the percentage of the U S population living in counties with access to five or more different mobile telephone operators, from 87 percent at the end of 2004 to nearly 51 percent at the end of 2005 Nevertheless, 98 percent of the total U S population continues to live in counties where three or more different operators compete to offer mobile telephone service in some parts of those counties, while nearly 94 percent of the U S population continues to live in counties with four or more mobile telephone operators competing to offer service [591]

215 In addition, while relatively few wireless customers have "cut the cord" in the sense of canceling their subscription to wireline telephone service, consumers appear increasingly to chose wireless service over traditional wireline service, particularly for certain uses According to one survey from early 2006, while only 12 percent of cellphone users use cellphones as their only phone, an additional 42 percent said they also had a landline phone but used their cellphones "most " In addition, one analyst estimates that customers in nearly a third of American households make at least half their long-distance calls at home from their cell phones rather than from their landlines

216 Using the various data sources and metrics discussed above, we have met our statutory

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[585] *See* Section VI D 2, Minutes of Use, *supra*, and VI E, International Comparisons, *supra*

[586] *See* Section VI B 1, Subscriber Growth, *supra*, and Section VI B 3, Mobile Data Usage, *supra*

[587] *See* Section VI A 1, Pricing Trends, *supra*

[588] *See* Section VI E, International Comparisons, *supra*

[589] *See* Section IV B 1, Technology Deployment and Upgrades, *supra*

[590] As noted earlier, the mergers of Sprint and Nextel and of Alltel and Western Wireless mergers closed too recently for their effects to be reflected in the indicators of market structure, carrier conduct, and market performance The structural changes resulting from these transactions, and their potential impact on carrier conduct and market performance, will be reflected in future reports

[591] *See* Appendix A, Table 9, *infra*

requirement to analyze the competitive market conditions with respect to commercial mobile services,[592] and conclude that the CMRS marketplace is effectively competitive

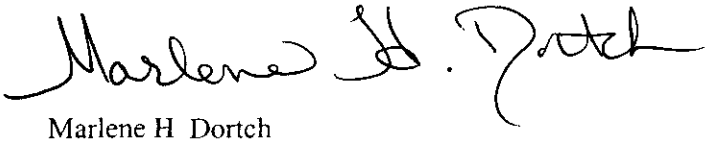
## IX PROCEDURAL MATTERS

217 This Eleventh Report is issued pursuant to authority contained in Section 332 (c)(1)(C) of the Communications Act of 1934, as amended, 47 U S C § 322 (c)(1)(C)

218 It is ORDERED that the Secretary shall send copies of this Report to the appropriate committees and subcommittees of the United States House of Representatives and the United States Senate

219 It is FURTHER ORDERED that the proceeding in the WT Docket No **XXX** IS TERMINATED

FEDERAL COMMUNICATIONS COMMISSION



Marlene H Dortch
Secretary

[592] *See* Section II A, Background, *supra*

# APPENDIX A

## Mobile Telephony

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**Table 1: CTIA's Semi-Annual Mobile Telephone Industry Survey**

| Date | Estimated Total Subscribers | Year End over Year End Subscriber Increase | 12-Month Total Service Revenues (in $000s) | 12-Month Roamer Services Revenues (in $000s) | Cell Sites | Direct Service Provider Employees | Average Local Monthly Bill (Dec Survey Periods) |
|---|---|---|---|---|---|---|---|
| 1985 | 340,213 | 248 613 | $482,428 | N/A | 913 | 2,727 | N/A |
| 1986 | 681,825 | 341 612 | $823 052 | N/A | 1,531 | 4,334 | N/A |
| 1987 | 1,230,855 | 549,030 | $1,151,519 | N/A | 2,305 | 7,147 | $96 83 |
| 1988 | 2,069,441 | 838,586 | $1,959,548 | N/A | 3,209 | 11 400 | $98 02 |
| 1989 | 3,508,944 | 1,439,503 | $3,340,595 | $294 567 | 4,169 | 15 927 | $83 94 |
| 1990 | 5,283,055 | 1 774,111 | $4,548,820 | $456,010 | 5,616 | 21 382 | $80 90 |
| 1991 | 7,557,148 | 2,274,093 | $5,708,522 | $703,651 | 7,847 | 26,327 | $72 74 |
| 1992 | 11,032,753 | 3,475,605 | $7,822 726 | $973,871 | 10,307 | 34,348 | $68 68 |
| 1993 | 16,009,461 | 4,976,708 | $10,892,175 | $1,361,613 | 12,805 | 39,775 | $61 48 |
| 1994 | 24,134,421 | 8,124,960 | $14,229,922 | $1,830,782 | 17,920 | 53,902 | $56 21 |
| 1995 | 33,785,661 | 9,651,240 | $19,081,239 | $2,542,570 | 22,663 | 68,165 | $51 00 |
| 1996 | 44,042,992 | 10,257,331 | $23,634,971 | $2,780,935 | 30,045 | 84,161 | $47 70 |
| 1997 | 55,312,293 | 11,269,301 | $27,485,633 | $2,974,205 | 51,600 | 109,387 | $42 78 |
| 1998 | 69,209,321 | 13,897,028 | $33,133,175 | $3,500,469 | 65,887 | 134,754 | $39 43 |
| 1999 | 86,047,003 | 16,837,682 | $40,018,489 | $4,085,417 | 81,698 | 155,817 | $41 24 |
| 2000 | 109,478,031 | 23,431,028 | $52,466,020 | $3,882,981 | 104,288 | 184,449 | $45 27 |
| 2001 | 128,374,512 | 18,896,481 | $65,316,235 | $3,752,826 | 127 540 | 203,580 | $47 37 |
| 2002 | 140,766,842 | 12,392,330 | $76,508,187 | $3,895,512 | 139,338 | 192,410 | $48 40 |
| 2003 | 158,721,981 | 17,955,139 | $87,624,093 | $3,766,267 | 162,986 | 205,629 | $49 91 |
| 2004 | 182,140,362 | 23,418,381 | $102,121,210 | $4,210,331 | 175,725 | 226,016 | $50 64 |
| 2005 | 207,896,198 | 25,755,836 | $113,538,221 | $3,786,331 | 183,689 | 233,067 | $49 98 |

Source: CTIA, *Background on CTIA's Semi-Annual Wireless Industry Survey* http://www.ctia.org/research_statistics/statistics/index.cfm/AID/10030 (Annualized Wireless Industry Survey Results - December 1985 To December 2005: Reflecting Domestic U S Commercially-Operational Cellular, ESMR and PCS Providers)

## Table 2: FCC's Semi-Annual Local Telephone Competition Survey: Mobile Telephone Subcribership

| State | Dec 2005 | | Subscribers | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Carriers [1] | Percent Resold [2] | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | |
| | | | Dec | Dec | Dec | Dec | Dec | Dec | Jun | Dec |
| Alabama | 13 | 6 % | 1,080,410 | 1,386,294 | 1,979,075 | 1,987,254 | 2,242,108 | 2,580,810 | 2,843,385 | 3,071,359 |
| Alaska | 10 | 2 | 165,221 | * | 240,216 | 267,630 | 303,184 | 321,152 | 340,507 | 376,695 |
| American Samoa | * | * | 0 | 0 | 0 | 0 | 0 | * | * | * |
| Arizona | 10 | 9 | 1,125,321 | 1,855,115 | 2,171,021 | 2,520,058 | 2,843,061 | 3,299,222 | 3,547,280 | 3,849,152 |
| Arkansas | 6 | 5 | 719,919 | 743,928 | 970,127 | 1,156,345 | 1,296,901 | 1,458,673 | 1,681,404 | 1,781,266 |
| California | 11 | 4 | 8,544,941 | 12,710,520 | 15,052,203 | 17,575,105 | 20,360,454 | 23,457,761 | 24,598,429 | 25,564,483 |
| Colorado | 8 | 10 | 1,552,718 | 1,856,075 | 2,145,816 | 2,358,748 | 2,554,731 | 2,808,195 | 3,053,186 | 3,260,286 |
| Connecticut | 5 | 5 | 1,077,089 | 1,277,123 | 1,639,914 | 1,694,110 | 1,928,988 | 2,181,133 | 2,332,045 | 2,466,372 |
| Delaware | 4 | 6 | 270,848 | 371,014 | 412,611 | 438,196 | 543,526 | 646,064 | 710,853 | 751,042 |
| Dist. of Columbia | 4 | 5 | 346,681 | 354,735 | 404,489 | 472,832 | 513,102 | 657,774 | 746,529 | 819,061 |
| Florida | 7 | 6 | 5,158,079 | 6,369,985 | 8,937,063 | 9,482,349 | 10,855,430 | 13,169,278 | 12,577,898 | 12,531,686 |
| Georgia | 9 | 6 | 2,538,983 | 2,754,784 | 4,149,717 | 4,497,576 | 4,940,091 | 5,730,223 | 6,023,302 | 6,103,234 |
| Guam | * | * | * | 0 | * | * | * | * | * | 61,670 |
| Hawaii | 4 | 3 | 288,425 | 524,291 | 595,721 | 689,857 | 771,023 | 880,965 | 935,189 | 983,998 |
| Idaho | 14 | 6 | 271,436 | 344,564 | 444,864 | 536,064 | 605,488 | 705,948 | 777,445 | 838,095 |
| Illinois | 9 | 6 | 3,922,482 | 5,143,767 | 5,631,172 | 6,476,683 | 7,183,989 | 8,075,938 | 8,575,211 | 9,026,588 |
| Indiana | 7 | 10 | 1,318,975 | 1,715,074 | 1,921,356 | 2,390,567 | 2,642,810 | 3,158,002 | 3,276,910 | 3,540,375 |
| Iowa | 39 | 7 | 774,773 | 832,106 | 1,087,608 | 1,239,384 | 1,342,931 | 1,557,542 | 1,593,673 | 1,767,830 |
| Kansas | 11 | 9 | 669,472 | 801,293 | 956,050 | 1,117,277 | 1,261,242 | 1,454,087 | 1,538,945 | 1,666,340 |
| Kentucky | 10 | 10 | 911,700 | 1,026,334 | 1,405,043 | 1,456,705 | 1,812,657 | 2,189,345 | 2,495,494 | 2,657,782 |
| Louisiana | 8 | 6 | 1,227,106 | 1,306,457 | 1,920,740 | 2,190,613 | 2,470,146 | 2,834,716 | 2,997,513 | 3,258,336 |
| Maine | 6 | 12 | 187,003 | 359,786 | 427,313 | 466,896 | 568,159 | 662,623 | 785,814 | 823,242 |
| Maryland | 6 | 5 | 1,634,625 | 2,298,651 | 2,614,216 | 2,913,943 | 3,319,605 | 3,900,172 | 4,177,782 | 4,470,611 |
| Massachusetts | 5 | 6 | 1,892,014 | 2,649,130 | 2,996,816 | 3,375,726 | 3,741,975 | 4,042,592 | 4,316,120 | 4,544,572 |
| Michigan | 10 | 8 | 3,512,813 | 3,551,719 | 4,238,399 | 4,674,980 | 5,114,259 | 5,766,616 | 6,238,846 | 6,613,341 |
| Minnesota | 9 | 10 | 1,550,411 | 1,851,430 | 2,153,857 | 2,415,033 | 2,677,472 | 2,973,126 | 3,124,214 | 3,370,196 |
| Mississippi | 9 | 7 | 673,355 | 786,577 | 1,048,061 | 1,112,765 | 1,324,160 | 1,517,702 | 1,627,762 | 1,817,099 |
| Missouri | 12 | 8 | 1,855,452 | 1,767,411 | 2,106,599 | 2,289,831 | 2,691,255 | 3,109,167 | 3,482,839 | 3,732,549 |
| Montana | 7 | 4 | * | * | 279,349 | 315,512 | 373,947 | * | 467,795 | 526,954 |
| Nebraska | 10 | 4 | 576,296 | 659,380 | 791,799 | 867,810 | 937,184 | 1,045,810 | 1,078,955 | 1,169,068 |
| Nevada | 8 | 7 | 750,335 | 684,752 | 842,155 | 984,486 | 1,216,838 | 1,463,370 | 1,605,708 | 1,778,411 |
| New Hampshire | 6 | 8 | 280,508 | 387,264 | 492,390 | 525,689 | 648,788 | 727,985 | 916,833 | 989,443 |
| New Jersey | 4 | 4 | 2,289,181 | 3,575,130 | 4,283,643 | 4,587,640 | 5,799,417 | 7,388,722 | 7,269,330 | 7,723,622 |
| New Mexico | 9 | 7 | 363,827 | 443,343 | 660,849 | 780,855 | 859,408 | 987,813 | 1,025,143 | 1,170,436 |
| New York | 11 | 6 | 4,833,816 | 5,918,136 | 7,429,249 | 8,937,683 | 9,453,613 | 10,834,741 | 11,901,311 | 12,634,420 |
| North Carolina | 14 | 6 | 2,536,068 | 3,105,811 | 3,767,598 | 4,094,715 | 4,554,723 | 5,363,630 | 5,496,422 | 5,784,334 |
| North Dakota | 6 | 3 | * | * | * | * | * | * | 388,609 | 454,456 |
| Northern Mariana Isl. | * | * | * | * | * | * | | * | * | * |
| Ohio | 11 | 8 | 3,237,786 | 4,150,498 | 4,739,795 | 5,212,204 | 5,817,211 | 6,627,910 | 7,056,675 | 7,559,975 |
| Oklahoma | 14 | 7 | 826,637 | 1,134,214 | 1,288,357 | 1,440,970 | 1,614,191 | 1,760,122 | 2,000,787 | 2,187,434 |
| Oregon | 9 | 8 | 914,848 | 1,201,207 | 1,399,279 | 1,682,343 | 1,778,936 | 2,029,224 | 2,128,710 | 2,417,992 |
| Pennsylvania | 11 | 8 | 2,767,474 | 4,129,186 | 4,849,085 | 5,258,844 | 6,073,573 | 7,037,296 | 7,340,862 | 7,881,534 |
| Puerto Rico | 6 | 1 | * | 757,613 | 1,128,736 | 1,516,808 | 1,631,266 | 2,076,698 | 2,002,851 | 2,110,798 |
| Rhode Island | 4 | 7 | 279,304 | 355,889 | 456,059 | 515,547 | 567,331 | 607,489 | 653,900 | 709,525 |
| South Carolina | 12 | 5 | 1,137,232 | 1,392,586 | 1,752,457 | 1,896,369 | 2,149,480 | 2,369,252 | 2,593,000 | 2,768,481 |
| South Dakota | 6 | 2 | * | * | 278,646 | 325,114 | 365,211 | 428,513 | 435,063 | 482,623 |
| Tennessee | 12 | 7 | 1,529,054 | 1,985,851 | 2,510,978 | 2,674,566 | 2,974,512 | 3,531,286 | 3,791,154 | 4,114,401 |
| Texas | 28 | 6 | 5,792,453 | 7,548,537 | 9,156,187 | 10,133,280 | 11,337,700 | 13,092,007 | 14,402,814 | 15,620,248 |
| Utah | 7 | 6 | 643,824 | 750,244 | 919,002 | 1,052,522 | 1,154,992 | 1,345,305 | 1,415,896 | 1,531,763 |
| Vermont | 4 | 14 | * | * | * | * | * | * | 295,971 | 315,382 |
| Virgin Islands | * | * | * | 0 | * | * | * | * | * | * |
| Virginia | 8 | 6 | 2,262,567 | 2,708,342 | 3,270,165 | 3,753,106 | 4,147,182 | 4,240,462 | 4,900,018 | 5,126,651 |
| Washington | 9 | 9 | 1,873,475 | 2,286,082 | 2,706,030 | 2,869,784 | 3,377,193 | 3,770,602 | 3,995,325 | 4,177,196 |
| West Virginia | 9 | 13 | 241,265 | 392,384 | 498,811 | 576,503 | 675,257 | 761,658 | 821,103 | 858,599 |
| Wisconsin | 12 | 6 | 1,525,818 | 1,698,520 | 2,229,389 | 2,396,562 | 2,723,985 | 2,997,029 | 3,191,190 | 3,355,951 |
| Wyoming | 8 | 5 | 127,634 | * | 194,665 | 191,939 | 295,706 | 302,203 | 330,567 | 358,593 |
| Nationwide | 155 | 6 % | 79,696,083 | 101,043,219 | 123,990,857 | 138,878,293 | 157,042,082 | 181,105,135 | 192,053,067 | 203,669,128 |

* Data withheld to maintain firm confidentiality. Some data have been revised.

[1] For data through December 2004, only facilities-based wireless carriers with at least 10,000 mobile telephony subscribers per state were required to report data, and they were instructed to use billing addresses to determine subscriber counts by state. Starting with the June 2005 data, all facilities-based wireless carriers are required to report and to use the area codes of telephone numbers provided to subscribers to determine subscriber counts by state.

[2] Percentage of mobile wireless subscribers receiving their service from a mobile wireless reseller.

Source: Local Telephone Competition: Status as of Dec 31, 2005, Federal Communications Commission, July 2006 (Table 14: Mobile Wireless Telephone Subscribers)

## Table 3: Economic Area Penetration Rates

| EA | EA Name | Subscribers | 2000 EA Population | 2005 Penetration Rate | 2005 HHI | 2004 Penetration Rate | 2004 HHI | EA density |
|---|---|---|---|---|---|---|---|---|
| 32 | Fort Myers Cape Coral, FL | 655,340 | 692,265 | 95% | 2416 | 78% | 1799 | 234.27 |
| 40 | Atlanta, GA-AL-NC | 5,015,564 | 5,471,412 | 92% | 2360 | 80% | 2096 | 246.04 |
| 153 | Las Vegas, NV-AZ-UT | 1,575,070 | 1,709,797 | 92% | 2584 | 77% | 2155 | 23.74 |
| 13 | Washington Baltimore, DC-MD-VA-WV-PA | 7,558,747 | 8,403,130 | 90% | 2739 | 79% | 2283 | 402.76 |
| 30 | Orlando, FL | 3,284,186 | 3,642,540 | 90% | 3028 | 74% | 2288 | 265.84 |
| 29 | Jacksonville, FL-GA | 1,662,868 | 1,885,190 | 88% | 2303 | 75% | 1797 | 112.52 |
| 31 | Miami-Fort Lauderdale, FL | 4,903,372 | 5,602,222 | 88% | 2418 | 74% | 2080 | 483.20 |
| 81 | Pensacola, FL | 549,964 | 623,252 | 88% | 2080 | 77% | 1744 | 154.06 |
| 161 | San Diego, CA | 2,476,716 | 2,813,833 | 88% | 2789 | 78% | 2486 | 660.48 |
| 34 | Tampa-St. Petersburg-Clearwater, FL | 2,039,328 | 2,395,997 | 85% | 2018 | 72% | 1727 | 890.99 |
| 57 | Detroit-Ann Arbor-Flint, MI | 5,884,704 | 6,963,637 | 85% | 2831 | 70% | 2118 | 364.07 |
| 82 | Biloxi-Gulfport-Pascagoula, MS | 337,071 | 396,754 | 85% | 1896 | 63% | 1844 | 143.45 |
| 130 | Austin-San Marcos, TX | 1,148,691 | 1,349,267 | 85% | 2920 | 76% | 2440 | 156.06 |
| 78 | Birmingham, AL | 1,324,715 | 1,578,903 | 84% | 2559 | 71% | 2265 | 137.13 |
| 172 | Honolulu, HI | 999,770 | 1,211,537 | 83% | 2504 | 74% | 2200 | 187.20 |
| 131 | Houston-Galveston-Brazoria, TX | 4,620,647 | 5,632,853 | 82% | 2510 | 70% | 2313 | 169.25 |
| 23 | Charlotte-Gastonia-Rock Hill, NC-SC | 1,645,981 | 2,031,519 | 81% | 2219 | 68% | 2019 | 240.50 |
| 74 | Huntsville, AL-TN | 808,774 | 997,824 | 81% | 2579 | 71% | 2560 | 119.14 |
| 160 | Los Angeles-Riverside-Orange County, CA-AZ | 14,655,513 | 18,003,420 | 81% | 2662 | 70% | 2433 | 286.10 |
| 26 | Charleston-North Charleston, SC | 468,541 | 587,297 | 80% | 2046 | 68% | 1908 | 149.80 |
| 84 | Baton Rouge, LA-MS | 593,055 | 739,673 | 80% | 4331 | 63% | 4103 | 140.30 |
| 141 | Denver-Boulder-Greeley, CO-KS-NE | 3,177,341 | 3,984,105 | 80% | 2342 | 71% | 2025 | 52.02 |
| 158 | Phoenix-Mesa, AZ-NM | 2,740,841 | 3,407,197 | 80% | 2068 | 68% | 1807 | 93.91 |
| 12 | Philadelphia-Wilmington-Atl. City, PA-NJ-DE-MD | 5,808,070 | 7,309,792 | 79% | 2749 | 69% | 2409 | 778.84 |
| 33 | Sarasota-Bradenton, FL | 603,137 | 763,795 | 79% | 2377 | 67% | 1863 | 273.56 |
| 85 | Lafayette, LA | 473,285 | 601,654 | 79% | 4193 | 60% | 4003 | 99.99 |
| 164 | Sacramento-Yolo, CA | 1,817,843 | 2,311,567 | 79% | 2567 | 68% | 2545 | 188.08 |
| 170 | Seattle Tacoma-Bremerton, WA | 3,271,644 | 4,135,291 | 79% | 2600 | 69% | 2336 | 190.45 |
| 10 | New York-No. New Jer.-Long Island, NY-NJ-CT-PA-MA-VT | 20,121,151 | 25,712,577 | 78% | 2659 | 69% | 2326 | 890.56 |
| 19 | Raleigh-Durham-Chapel Hill, NC | 1,421,115 | 1,831,510 | 78% | 2191 | 69% | 1865 | 188.38 |
| 127 | Dallas-Fort Worth, TX-AR-OK | 5,964,163 | 7,645,530 | 78% | 2825 | 66% | 2708 | 119.00 |
| 163 | San Francisco Oakland-San Jose, CA | 7,108,019 | 9,111,806 | 78% | 2636 | 69% | 2598 | 271.07 |
| 20 | Norfolk-Virginia Beach-Newport News, VA-NC | 1,318,081 | 1,722,764 | 77% | 2036 | 66% | 1712 | 289.89 |
| 28 | Savannah, GA-SC | 512,403 | 668,214 | 77% | 1605 | 60% | 1760 | 91.95 |
| 35 | Tallahassee, FL GA | 553,429 | 720,434 | 77% | 2298 | 65% | 2105 | 63.51 |
| 70 | Louisville, KY IN | 1,095,457 | 1,416,914 | 77% | 2572 | 67% | 2233 | 180.92 |
| 83 | New Orleans, LA-MS | 1,324,220 | 1,725,338 | 77% | 3040 | 63% | 2570 | 171.93 |
| 134 | San Antonio, TX | 1,656,504 | 2,141,060 | 77% | 3173 | 64% | 2687 | 82.99 |
| 3 | Boston-Worcester-Lawrence-Lowell Brockton, MA-NH-RI-VT | 6,016,321 | 7,954,554 | 76% | 2664 | 67% | 2319 | 421.83 |
| 15 | Richmond-Petersburg, VA | 1,098,675 | 1,446,123 | 76% | 2250 | 66% | 1895 | 124.03 |
| 42 | Asheville, NC | 335,779 | 444,594 | 76% | 3538 | 62% | 3609 | 128.63 |
| 99 | Kansas City, MO-KS | 1,872,482 | 2,469,340 | 76% | 2328 | 66% | 1954 | 88.73 |
| 155 | Farmington, NM CO | 148,156 | 193,872 | 76% | 3462 | 59% | 4516 | 16.04 |
| 71 | Nashville, TN KY | 1,832,718 | 2,444,643 | 75% | 2526 | 64% | 2212 | 105.12 |
| 87 | Beaumont-Port Arthur, TX | 340,858 | 456,637 | 75% | 3151 | 57% | 3187 | 89.20 |
| 151 | Reno, NV CA | 502,641 | 670,013 | 75% | 2282 | 64% | 2115 | 7.56 |

| EA | EA Name | Subscribers | 2000 EA Population | 2005 Penetration Rate | 2005 HHI | 2004 Penetration Rate | 2004 HHI | EA density |
|---|---|---|---|---|---|---|---|---|
| 64 | Chicago-Gary-Kenosha, IL-IN-WI | 7,663,354 | 10,328,854 | 74% | 2178 | 65% | 1884 | 556.54 |
| 167 | Portland-Salem, OR-WA | 2,122,657 | 2,883,737 | 74% | 2392 | 63% | 2251 | 76.01 |
| 24 | Columbia, SC | 679,824 | 932,115 | 73% | 2257 | 63% | 2170 | 125.95 |
| 25 | Wilmington, NC SC | 644,206 | 878,267 | 73% | 1897 | 60% | 1828 | 107.39 |
| 103 | Cedar Rapids, IA | 282,140 | 384,577 | 73% | 2862 | 67% | 2826 | 101.33 |
| 44 | Knoxville, TN | 709,837 | 983,329 | 72% | 2491 | 62% | 2266 | 165.64 |
| 51 | Columbus, OH | 1,687,113 | 2,349,060 | 72% | 2914 | 61% | 2279 | 190.40 |
| 73 | Memphis, TN-AR-MS-KY | 1,348,071 | 1,882,332 | 72% | 2552 | 63% | 2395 | 102.99 |
| 98 | Columbia, MO | 265,695 | 369,014 | 72% | 3742 | 63% | 3565 | 58.00 |
| 154 | Flagstaff, AZ-UT | 290,386 | 401,766 | 72% | 2782 | 56% | 2809 | 8.24 |
| 159 | Tucson, AZ | 722,581 | 999,882 | 72% | 2011 | 62% | 1741 | 60.03 |
| 22 | Fayetteville, NC | 376,588 | 528,224 | 71% | 1971 | 62% | 1880 | 164.57 |
| 41 | Greenville-Spartanburg-Anderson, SC-NC | 885,169 | 1,248,824 | 71% | 2840 | 61% | 2731 | 183.62 |
| 43 | Chattanooga, TN-GA | 514,315 | 720,375 | 71% | 2892 | 60% | 2476 | 145.32 |
| 49 | Cincinnati-Hamilton, OH-KY-IN | 1,561,714 | 2,184,860 | 71% | 2357 | 62% | 2136 | 294.08 |
| 86 | Lake Charles, LA | 380,920 | 536,758 | 71% | 2906 | 54% | 2680 | 52.41 |
| 97 | Springfield, IL-MO | 364,828 | 517,462 | 71% | 3589 | 62% | 3518 | 58.20 |
| 107 | Minneapolis-St. Paul, MN-WI-IA | 3,205,089 | 4,498,286 | 71% | 1910 | 64% | 1554 | 82.98 |
| 143 | Casper, WY-ID-UT | 288,281 | 408,708 | 71% | 4577 | 61% | 4378 | 5.17 |
| 148 | Idaho Falls, ID-WY | 215,833 | 306,120 | 71% | 2522 | 63% | 2540 | 10.85 |
| 150 | Boise City, ID-OR | 409,295 | 574,876 | 71% | 2643 | 61% | 2391 | 13.69 |
| 152 | Salt Lake City-Ogden, UT-ID | 1,479,612 | 2,088,974 | 71% | 2192 | 61% | 2137 | 35.68 |
| 156 | Albuquerque, NM-AZ | 651,793 | 921,086 | 71% | 2046 | 60% | 2012 | 20.89 |
| 37 | Albany, GA | 326,796 | 468,178 | 70% | 2306 | 58% | 2540 | 62.74 |
| 67 | Indianapolis, IN-IL | 2,156,501 | 3,066,469 | 70% | 3021 | 58% | 2721 | 171.37 |
| 96 | St. Louis, MO-IL | 2,503,004 | 3,558,651 | 70% | 2751 | 61% | 2613 | 127.01 |
| 11 | Harrisburg-Lebanon-Carlisle, PA | 779,990 | 1,125,265 | 69% | 3028 | 61% | 2906 | 292.42 |
| 69 | Evansville-Henderson, IN-KY-IL | 585,718 | 854,714 | 69% | 4003 | 56% | 3851 | 75.31 |
| 135 | Odessa-Midland, TX | 266,150 | 388,007 | 69% | 3483 | 56% | 3411 | 10.13 |
| 16 | Staunton, VA-WV | 227,848 | 334,087 | 68% | 2036 | 57% | 1849 | 50.99 |
| 18 | Greensboro-Winston-Salem-High Point, NC-VA | 1,264,918 | 1,854,853 | 68% | 1980 | 58% | 1829 | 189.09 |
| 50 | Dayton-Springfield, OH | 775,636 | 1,133,004 | 68% | 2662 | 59% | 2354 | 318.52 |
| 77 | Jackson, MS-AL-LA | 970,771 | 1,432,518 | 68% | 3108 | 56% | 2883 | 49.67 |
| 89 | Monroe, LA | 227,890 | 333,519 | 68% | 4051 | 59% | 4044 | 56.12 |
| 90 | Little Rock-North Little Rock, AR | 1,098,112 | 1,614,850 | 68% | 4163 | 60% | 3968 | 46.09 |
| 92 | Fayetteville-Springdale-Rogers, AR-MO-OK | 274,800 | 405,160 | 68% | 3960 | 59% | 3685 | 88.43 |
| 122 | Wichita, KS-OK | 800,782 | 1,175,577 | 68% | 2154 | 57% | 1862 | 20.49 |
| 137 | Lubbock, TX | 253,694 | 374,626 | 68% | 2841 | 60% | 2669 | 27.17 |
| 38 | Macon, GA | 512,836 | 768,701 | 67% | 2242 | 56% | 1868 | 62.88 |
| 63 | Milwaukee-Racine, WI | 1,502,765 | 2,255,183 | 67% | 2344 | 61% | 2339 | 366.88 |
| 80 | Mobile, AL | 451,303 | 676,258 | 67% | 3291 | 63% | 2431 | 74.75 |
| 106 | Rochester, MN-IA-WI | 214,030 | 318,374 | 67% | 3246 | 61% | 3176 | 55.65 |
| 132 | Corpus Christi, TX | 366,378 | 549,012 | 67% | 3066 | 57% | 2834 | 46.47 |
| 14 | Salisbury, MD-DE-VA | 239,395 | 363,970 | 66% | 5101 | 54% | 5693 | 111.17 |
| 39 | Columbus, GA AL | 329,335 | 496,538 | 66% | 2186 | 69% | 1669 | 84.08 |
| 75 | Tupelo, MS-AL-TN | 411,182 | 625,002 | 66% | 5034 | 57% | 4820 | 49.76 |
| 88 | Shreveport-Bossier City, LA-AR | 376,462 | 573,616 | 66% | 3389 | 55% | 3387 | 57.96 |
| 93 | Joplin, MO-KS-OK | 174,937 | 263,904 | 66% | 3162 | 56% | 3133 | 74.68 |

| EA | EA Name | Subscribers | 2000 EA Population | 2005 Penetration Rate | 2005 HHI | 2004 Penetration Rate | 2004 HHI | EA density |
|---|---|---|---|---|---|---|---|---|
| 116 | Sioux Falls, SD-IA-MN-NE | 344,606 | 519,143 | 66% | 3754 | 58% | 3567 | 15.11 |
| 118 | Omaha, NE-IA-MO | 690,413 | 1,044,156 | 66% | 2310 | 60% | 1985 | 62.40 |
| 119 | Lincoln, NE | 250,803 | 379,321 | 66% | 5484 | 62% | 3819 | 50.24 |
| 124 | Tulsa, OK-KS | 917,117 | 1,384,426 | 66% | 2694 | 59% | 2777 | 72.44 |
| 149 | Twin Falls, ID | 107,304 | 162,397 | 66% | 2413 | 58% | 2429 | 14.08 |
| 162 | Fresno, CA | 930,478 | 1,419,998 | 66% | 3122 | 55% | 3387 | 98.64 |
| 166 | Eugene-Springfield, OR-CA | 522,915 | 791,776 | 66% | 1882 | 57% | 1938 | 43.10 |
| 2 | Portland, ME | 489,986 | 748,817 | 65% | 2479 | 58% | 2614 | 98.56 |
| 5 | Albany-Schenectady Troy, NY | 764,498 | 1,171,669 | 65% | 3138 | 57% | 2740 | 134.71 |
| 21 | Greenville, NC | 532,002 | 823,517 | 65% | 2660 | 56% | 2687 | 87.74 |
| 27 | Augusta-Aiken, GA-SC | 395,954 | 604,799 | 65% | 2021 | 57% | 2004 | 89.79 |
| 94 | Springfield, MO | 556,416 | 859,559 | 65% | 3350 | 56% | 3303 | 48.14 |
| 101 | Peoria-Pekin, IL | 344,542 | 528,671 | 65% | 3343 | 56% | 3451 | 90.99 |
| 102 | Davenport-Moline-Rock Island, IA-IL | 365,550 | 558,913 | 65% | 2666 | 57% | 2514 | 108.27 |
| 53 | Pittsburgh, PA-WV | 1,907,756 | 2,971,829 | 64% | 2887 | 57% | 2649 | 284.77 |
| 55 | Cleveland-Akron, OH-PA | 2,994,142 | 4,692,460 | 64% | 2368 | 54% | 2269 | 427.84 |
| 144 | Billings, MT-WY | 260,249 | 404,902 | 64% | 4581 | 55% | 4397 | 4.89 |
| 59 | Green Bay, WI-MI | 419,852 | 671,225 | 63% | 2583 | 56% | 2468 | 34.15 |
| 60 | Appleton Oshkosh-Neenah, WI | 272,802 | 433,250 | 63% | 2118 | 54% | 2427 | 143.62 |
| 62 | Grand Rapids-Muskegon-Holland, MI | 1,179,499 | 1,881,991 | 63% | 2926 | 55% | 2204 | 206.76 |
| 68 | Champaign-Urbana, IL | 394,350 | 630,898 | 63% | 3097 | 54% | 2923 | 73.47 |
| 100 | Des Moines, IA IL-MO | 1,061,186 | 1,683,257 | 63% | 2947 | 56% | 3011 | 47.32 |
| 104 | Madison, WI-IL-IA | 591,008 | 933,823 | 63% | 4009 | 57% | 4237 | 71.33 |
| 128 | Abilene, TX | 139,810 | 222,147 | 63% | 3449 | 52% | 3095 | 20.35 |
| 138 | Amarillo, TX-NM | 302,510 | 481,633 | 63% | 2039 | 56% | 1695 | 11.79 |
| 146 | Missoula, MT | 252,695 | 399,183 | 63% | 4737 | 53% | 4762 | 10.79 |
| 165 | Redding, CA-OR | 213,119 | 336,820 | 63% | 2325 | 55% | 2031 | 14.36 |
| 169 | Richland-Kennewick-Pasco, WA | 424,544 | 677,674 | 63% | 2583 | 54% | 2638 | 27.68 |
| 17 | Roanoke, VA-NC-WV | 511,813 | 826,284 | 62% | 1988 | 53% | 1898 | 97.83 |
| 45 | Johnson City-Kingsport-Bristol, TN-VA | 359,589 | 576,081 | 62% | 2134 | 54% | 1945 | 144.51 |
| 56 | Toledo, OH | 800,279 | 1,294,395 | 62% | 3049 | 54% | 2873 | 163.94 |
| 66 | Fort Wayne, IN | 450,281 | 725,847 | 62% | 3294 | 53% | 3274 | 158.50 |
| 123 | Topeka, KS | 283,135 | 454,539 | 62% | 2308 | 55% | 1760 | 35.62 |
| 133 | McAllen-Edinburg-Mission, TX | 608,620 | 978,369 | 62% | 3423 | 50% | 2902 | 221.96 |
| 136 | Hobbs, NM-TX | 117,764 | 190,340 | 62% | 3283 | 52% | 3198 | 11.21 |
| 142 | Scottsbluff, NE-WY | 57,143 | 92,360 | 62% | 6440 | 56% | 7064 | 7.81 |
| 147 | Spokane, WA-ID | 518,155 | 829,735 | 62% | 2815 | 54% | 2609 | 23.63 |
| 121 | North Platte, NE-CO | 37,616 | 61,758 | 61% | 8720 | 57% | 7018 | 4.95 |
| 139 | Santa Fe, NM | 158,172 | 258,790 | 61% | 3031 | 54% | 3014 | 13.06 |
| 46 | Hickory-Morganton, NC TN | 313,298 | 519,208 | 60% | 2500 | 51% | 2428 | 131.90 |
| 95 | Jonesboro, AR-MO | 182,232 | 303,852 | 60% | 4773 | 51% | 4657 | 51.30 |
| 111 | Minot, ND | 66,459 | 111,195 | 60% | 3858 | 60% | 3465 | 7.00 |
| 112 | Bismarck, ND-MT-SD | 105,492 | 175,427 | 60% | 4838 | 52% | 5005 | 6.26 |
| 113 | Fargo-Moorhead, ND-MN | 223,859 | 371,691 | 60% | 3008 | 54% | 2806 | 16.40 |
| 125 | Oklahoma City, OK | 1,022,155 | 1,698,197 | 60% | 2574 | 61% | 3714 | 65.04 |
| 157 | El Paso, TX-NM | 577,453 | 955,602 | 60% | 2403 | 49% | 2131 | 33.04 |
| 65 | Elkhart-Goshen, IN-MI | 551,262 | 936,245 | 59% | 2436 | 50% | 2197 | 185.73 |
| 79 | Montgomery, AL | 283,576 | 481,137 | 59% | 2196 | 68% | 1724 | 66.86 |

| EA | EA Name | Subscribers | 2000 EA Population | 2005 Penetration Rate | 2005 HHI | 2004 Penetration Rate | 2004 HHI | EA density |
|---|---|---|---|---|---|---|---|---|
| 91 | Fort Smith, AR OK | 194,148 | 329,136 | 59% | 3860 | 51% | 3655 | 46.51 |
| 120 | Grand Island, NE | 168,676 | 288,047 | 59% | 9043 | 55% | 6654 | 11.56 |
| 115 | Rapid City, SD MT-NE ND | 126,199 | 213,696 | 59% | 4688 | 52% | 4672 | 5.04 |
| 6 | Syracuse, NY-PA | 1,111,128 | 1,902,640 | 58% | 3667 | 51% | 3461 | 104.74 |
| 7 | Rochester, NY-PA | 865,630 | 1,493,518 | 58% | 4017 | 52% | 3530 | 167.21 |
| 8 | Buffalo Niagara Falls, NY-PA | 879,395 | 1,507,759 | 58% | 2980 | 51% | 2597 | 212.89 |
| 61 | Traverse City, MI | 165,381 | 286,745 | 58% | 4220 | 54% | 4192 | 50.67 |
| 72 | Paducah, KY-IL | 128,444 | 226,586 | 57% | 5630 | 46% | 6137 | 70.02 |
| 117 | Sioux City, IA NE-SD | 143,266 | 252,656 | 57% | 3671 | 48% | 3437 | 39.51 |
| 126 | Western Oklahoma, OK | 79,124 | 139,761 | 57% | 2574 | 52% | 2956 | 12.04 |
| 171 | Anchorage, AK | 355,240 | 626,932 | 57% | 4198 | 51% | 4436 | 1.07 |
| 1 | Bangor, ME | 294,771 | 526,106 | 56% | 4932 | 51% | 4862 | 20.94 |
| 4 | Burlington, VT-NY | 339,019 | 605,393 | 56% | 4885 | 47% | 4686 | 57.62 |
| 47 | Lexington, KY-TN-VA-WV | 1,038,532 | 1,851,367 | 56% | 2768 | 47% | 2229 | 80.39 |
| 110 | Grand Forks, ND-MN | 129,534 | 230,253 | 56% | 3922 | 49% | 3973 | 10.16 |
| 9 | State College, PA | 445,347 | 809,979 | 55% | 4035 | 49% | 3724 | 92.41 |
| 109 | Duluth-Superior, MN-WI | 191,475 | 350,059 | 55% | 3464 | 48% | 3720 | 18.53 |
| 140 | Pueblo, CO-NM | 151,911 | 279,600 | 54% | 2654 | 49% | 2385 | 8.71 |
| 36 | Dothan, AL-FL-GA | 168,520 | 332,409 | 51% | 2039 | 58% | 2225 | 53.70 |
| 108 | Wausau, WI | 250,248 | 487,723 | 51% | 2177 | 45% | 2314 | 34.13 |
| 48 | Charleston, WV-KY-OH | 602,908 | 1,199,373 | 50% | 2590 | 44% | 2323 | 85.35 |
| 145 | Great Falls, MT | 83,336 | 166,564 | 50% | 4409 | 44% | 4290 | 4.23 |
| 52 | Wheeling, WV-OH | 158,946 | 327,645 | 49% | 4158 | 42% | 4188 | 124.54 |
| 105 | La Crosse, WI-MN | 118,583 | 241,903 | 49% | 4008 | 44% | 4045 | 53.67 |
| 54 | Erie, PA | 251,423 | 519,348 | 48% | 4255 | 44% | 4049 | 116.41 |
| 168 | Pendleton, OR-WA | 96,098 | 200,681 | 48% | 2861 | 43% | 3327 | 8.67 |
| 76 | Greenville, MS | 119,346 | 252,280 | 47% | 3249 | 40% | 3411 | 40.96 |
| 129 | San Angelo, TX | 89,637 | 202,679 | 44% | 3167 | 37% | 2871 | 10.05 |
| 58 | Northern Michigan, MI | 110,176 | 269,986 | 41% | 4437 | 38% | 4563 | 28.53 |
| 114 | Aberdeen, SD | * | 82,608 | * | * | * | * | 5.39 |

* Data withheld to maintain firm confidentiality
Source: Federal Communications Commission internal analysis based on preliminary year-end 2005 filings for Numbering Resource Utilization in the United States Population based on 2000 Census Density is persons per square mile

**Table 4: Top 25 Mobile Telephone Operators by Subscribers (in thousands)**

| | Year-End 2004 | | Year-End 2005 | |
|---|---|---|---|---|
| | Operator | Total | Operator | Total |
| 1 | Cingular Wireless | 49,109 | Cingular Wireless | 54,144 |
| 2 | Verizon Wireless | 43,816 | Verizon Wireless | 51,337 |
| 3 | Sprint PCS | 21,507 | Sprint Nextel (3) (4) | 44,815 |
| 4 | T-Mobile | 17,314 | T-Mobile | 21,690 |
| 5 | Nextel | 16,247 | Alltel (5) | 10,662 |
| 6 | Alltel | 8,626 | US Cellular | 4,945 |
| 7 | US Cellular | 4,945 | Nextel Partners (4) | 2,018 |
| 8 | Dobson Comm | 1,609 | MetroPCS (6) | 2,000 |
| 9 | Nextel Partners | 1,602 | Leap | 1,668 |
| 10 | Leap | 1,569 | Dobson Comm | 1,543 |
| 11 | MetroPCS | 1,500 | Centennial (7) | 1,338 |
| 12 | Western Wireless | 1,395 | Alamosa PCS (4) (8) | 1,000 |
| 13 | Centennial (1) | 1,108 | Suncom | 966 |
| 14 | Suncom | 951 | Rural Cellular | 706 |
| 15 | Alamosa PCS | 915 | Cellular South | 500 |
| 16 | Qwest (2) | 754 | Cincinnati Bell Wireless | 496 |
| 17 | Rural Cellular | 730 | iPCS (9) | 495 |
| 18 | Cincinnati Bell Wireless | 481 | Ubiquitel (4) | 448 |
| 19 | US Unwired | 469 | Midwest Wireless (5) | 440 |
| 20 | Cellular South | 400 | Ntelos | 336 |
| 21 | AirGate PCS | 400 | SouthernLINC | 260 |
| 22 | Midwest Wireless | 400 | Shenendoah Telecomm | 162 |
| 23 | Ubiquitel | 497 | Blugrass Cellular | 130 |
| 24 | SouthernLINC | 260 | Alaska Commun | 113 |
| 25 | iPCS | 249 | Surewest Wireless | 54 |

Sources: For 2004, *see Tenth Report*, at 15993 For 2005, publicly available company documents such as operators' news releases and filings made with the Securities and Exchange Commission Midwest Wireless, Company Facts (visited Apr 20, 2006) <http //www midwestwireless com/Home/AboutUs/CompanyFacts htm> (Midwest Wireless), B Parmley, *Bluegrass Cellular Launches Wireless Service in Somerset and Announces New Sales Staff*, Somerset Commonwealth Journal, Apr 2, 2006, at D1 (Bluegrass Cellular); Cellular South Comments, SouthernLINC, *Frequently Asked Questions* (visited June 15, 2005) <http //www solinc com/faqs asp> (Southern LINC), *MetroPCS Reaches Two Million Customers on Four Year Anniversary of Service*, News Release, MetroPCS, Feb 7, 2006 (MetroPCS)

Notes
(1) As of Nov 30, 2003, includes Puerto Rico, the US Virgin Islands, and the Dominican Republic
(2) In the second quarter of 2004, existing Qwest subscribers began transitioning to Sprint PCS's network as Qwest exited the facilities-based provision of wireless service Sprint expected this transfer to be substantively complete by the end of the first quarter of 2005 Sprint, SEC Form 10K, filed Apr 29, 2005, at 4 *See also Ninth Report,* at 20627-20628
(3) On August 12, 2005, Sprint PCS completed its merger with Nextel This total includes Direct Post-Paid Subscribers (36 977 million), Direct Pre-Paid Subscribers (Boost subsidiary, with 2 684 million) and Wholesale Subscribers (5 154 million)
(4) In 2005, Sprint Nextel acquired three affiliates - US Unwired, Gulf Coast, and IWO Sprint Nextel completed its acquisition of Alamosa on Feb 1, 2006 and its acquisition of Nextel Partners on June 26, 2006 Sprint Nextel has also agreed to acquire UbiquiTel
(5) On August 1, 2005, Alltel completed its acquisition of Western Wireless On November 18, 2005, Alltel announced an agreement to purchase Midwest Wireless
(6) As of February 2006
(7) As of Nov 30, 2004, includes Puerto Rico, the US Virgin Islands, and the Dominican Republic
(8) On Feb 15, 2005, Alamosa completed its acquisition of AirGate PCS
(9) On July 1, 2005, iPCS completed its merger with Horizon PCS, another Sprint PCS affiliate Horizon PCS reported 189,000 subscribers as of Dec 31, 2004

**Table 5: NRUF-Estimated Mobile Telephone Subscribers**

| | Subscribers (millions) | Increase from previous year (millions) | Penetration Rate |
|---|---|---|---|
| 2001 | 128 5 | n/a | 45 % |
| 2002 | 141 8 | 13 3 | 49 % |
| 2003 | 160 6 | 18 8 | 54 % |
| 2004 | 184 7 | 24 1 | 62 % |
| 2005 | 213 0 | 28 3 | 71 % |

**Table 6: Estimated Mobile Telephone Rollouts by County**

| Total Number of Providers in a County | Number of Counties | POPs Contained in Those Counties (1) | % of Total US POPs | Square Miles Contained in Those Counties | % of Total US Square Miles |
|---|---|---|---|---|---|
| 3 or More | 2674 | 279699484 | 98 0% | 2,468,670 | 68 4% |
| 4 or More | 2097 | 267640610 | 93 8% | 1,839,104 | 51 0% |
| 5 or More | 1167 | 145030235 | 50 8% | 965,569 | 26 8% |
| 6 or More | 414 | 50092268 | 17 6% | 292,820 | 8 1% |
| 7 or More | 66 | 6706603 | 2 4% | 42,059 | 1 2% |

Source Federal Communications Commission estimates based on publicly available information
Notes
(1) POPs from the 2000 Census,
(2) United States and Puerto Rico

**Table 7: Mobile Telephone Digital Coverage**

| Technology | POPs in Covered Counties (1) | % of Total POPs (2) | Square Miles Contained in Those Counties | % of Total Square Miles |
|---|---|---|---|---|
| CDMA | 283,583,958 | 99.4% | 3,322,475 | 92.2% |
| TDMA / GSM | 279,589,296 | 98.0% | 3,004,001 | 83.3% |
| iDEN | 267,610,225 | 93.8% | 1,887,718 | 52 3% |
| Total Digital | 285,230,516 | 100.0% | 3,606,933 | 100.0% |

Source Federal Communications Commission estimates based on publicly available information

Notes
Broadband PCS and digital SMR licensees are analyzed by county; cellular licensees are analyzed by cellular market areas ("CMAs")
(1) POPs from the 2000 Census
(2) United States and Puerto Rico

**Table 8: Mobile Telephone NextGen Coverage**

| Technology | POPs in Covered Counties (1) | % of Total POPs (2) | Square Miles Contained in Those Counties | % of Total Square Miles |
|---|---|---|---|---|
| CDMA Path (1xRTT/EVDO) | 282,726,629 | 99 1% | 2,818,949 | 78 2% |
| GSM Path (GPRS/EDGE/WCDMA/HSDPA) | 269,022,781 | 94 3% | 1,893,335 | 52 5% |
| WCDMA/HSDPA | 57,524,389 | 20 2% | 82,159 | 2 3% |
| EVDO | 178,642,051 | 62 6% | 478,792 | 13 3% |

Source: Federal Communications Commission estimates based on publicly available information

Notes
(1) POPs from the 2000 Census
(2) United States and Puerto Rico

**Table 9: Change in CPI**

| | CPI | | Cellular CPI | | All Telephone CPI | | Local Telephone CPI | | Long Distance Telephone CPI | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Index Value | Annual Change | Index Value | Annual Change | Index Value | Annual Change | Index Value | Annual Change | Index Value | Annual Change |
| Dec 1997 | 100 | | 100 | | 100 | | 100 | | 100 | |
| 1998 | 101 6 | | 95 1 | | 100.7 | | 101 6 | | 100 5 | |
| 1999 | 103.8 | 2.2% | 84.9 | -10.7% | 100.1 | -0.6% | 103.4 | 1.8% | 98.2 | -2.3% |
| 2000 | 107 3 | 3.4% | 76 | -10 5% | 98 5 | -1 6% | 107 7 | 4.1% | 91 8 | -6.5% |
| 2001 | 110.3 | 2.8% | 68.1 | -10.4% | 99.3 | 0.8% | 113.3 | 5.2% | 88.8 | -3.3% |
| 2002 | 112.1 | 1 6% | 67 4 | -1.0% | 99 7 | 0.4% | 118.5 | 4.5% | 84.9 | -4.4% |
| 2003 | 114.6 | 2.3% | 66.8 | -0.9% | 98.3 | -1.4% | 123.3 | 4.1% | 77.8 | -8.4% |
| 2004 | 117.7 | 2.7% | 66.2 | -0.9% | 95.8 | -2.5% | 125.1 | 1.5% | 70.9 | -8.9% |
| 2005 | 121 7 | 3.4% | 65 | -1 8% | 94.9 | -0.9% | 128.5 | 2.7% | 67.5 | -4.8% |
| | | | | | | | | | | |
| Dec 1997 to 2005 | | 21.7% | | -35.0% | | -5.1% | | 28.5% | | -32.5% |

Source: Bureau of Labor Statistics

**Table 10: Average Revenue Per Minute**

| | Average Local Monthly Bill | Minutes of Use Per Month | Average Revenue Per Minute | Annual Change |
|---|---|---|---|---|
| 1993 | $61 49 | 140 | $0 44 | |
| 1994 | $56 21 | 119 | $0 47 | 8% |
| 1995 | $51 00 | 119 | $0 43 | -9% |
| 1996 | $47 70 | 125 | $0 38 | -11% |
| 1997 | $42 78 | 117 | $0 37 | -4% |
| 1998 | $39 43 | 136 | $0 29 | -21% |
| 1999 | $41 24 | 185 | $0 22 | -23% |
| 2000 | $45 27 | 255 | $0 18 | -20% |
| 2001 | $47 37 | 380 | $0 12 | -30% |
| 2002 | $48 40 | 427 | $0 11 | -9% |
| 2003 | $49 91 | 507 | $0 10 | -13% |
| 2004 | $50 64 | 584 | $0 09 | -12% |
| 2005 | $49 98 | 740 | $0 07 | -22% |

Note: Data covers the last six months of each year
Source: *See* Appendix A, Table 1, at 87 (ARPU), *Dec 2005 CTIA Survey*, at 217-218 (minutes of use)

**Table 11: Market Entry Over Time**

| | Percent of Total US POPs Covered | | | | | | |
|---|---|---|---|---|---|---|---|
| Total Number of Providers in a County | 11th Report | Tenth Report | Ninth Report | Eighth Report | Seventh Report | Sixth Report | Fifth Report |
| 3 or more | 98.0% | 96.9% | 96.8% | 94.7% | 94.1% | 90.8% | 87.8% |
| 4 or more | 93.8% | 93.2% | 93.0% | 89.3% | 88.7% | 84.4% | 79.8% |
| 5 or more | 50.8% | 87.3% | 87.5% | 82.6% | 80.4% | 75.1% | 68.5% |
| 6 or more | 17.6% | 41.3% | 75.8% | 71.1% | 53.1% | 46.7% | 34.6% |
| 7 or more | 2.4% | 12 6% | 29.5% | 25.4% | 21 2% | 11.9% | 4.4% |

Source FCC estimates

**Table 12: Mobile Market Structure and Performance in Selected Countries**

| Country | Number of Players | Penetration (%) | MOUs | Revenue per Minute ($) | Data (% of ARPU) |
|---|---|---|---|---|---|
| **Mobile Party Pays** | | | | | |
| USA | 4+ | 70 | 798 | 0.07 | 10 |
| Canada | 3 | 53 | 403 | 0.11 | 9 |
| Hong Kong | 5 | 106 | 395 | 0 04 | 15 |
| Singapore | 3 | 98 | 313 | 0.08 | 20 |
| **Calling Party Pays** | | | | | |
| UK | 5 | 113 | 146 | 0.21 | 22 |
| Germany | 4 | 97 | 81 | 0.28 | 18 |
| Italy | 4 | 123 | 126 | 0.21 | 16 |
| Sweden | 4 | 114 | 141 | 0.17 | 7 |
| France | 3 | 79 | 235 | 0.17 | 14 |
| Spain | 3 | 108 | 150 | 0.22 | 14 |
| Finland | 3 | 101 | 279 | 0.11 | 14 |
| Japan | 3 | 74 | 147 | 0.27 | 26 |
| South Korea | 3 | 79 | 322 | 0.10 | 18 |
| Australia | 4 | 95 | 178 | 0.17 | 15 |

Sources *Interactive Global Wireless Matrix 4Q05,* Merrill Lynch, Telecom Services Research In markets where calling party pays is used, figures for minutes of use (MOUs) may be somewhat understated, and the revenue figures used to calculate ARPU somewhat overstated, relative to markets where mobile party pays is used Consequently, figures for revenue per minute (ARPU divided by MOUs) probably overstate the difference between revenue per minute in the United States (along with other mobile party pays markets) and calling party pays markets *See* Section VI D, International Comparisons, *supra*

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## Maps

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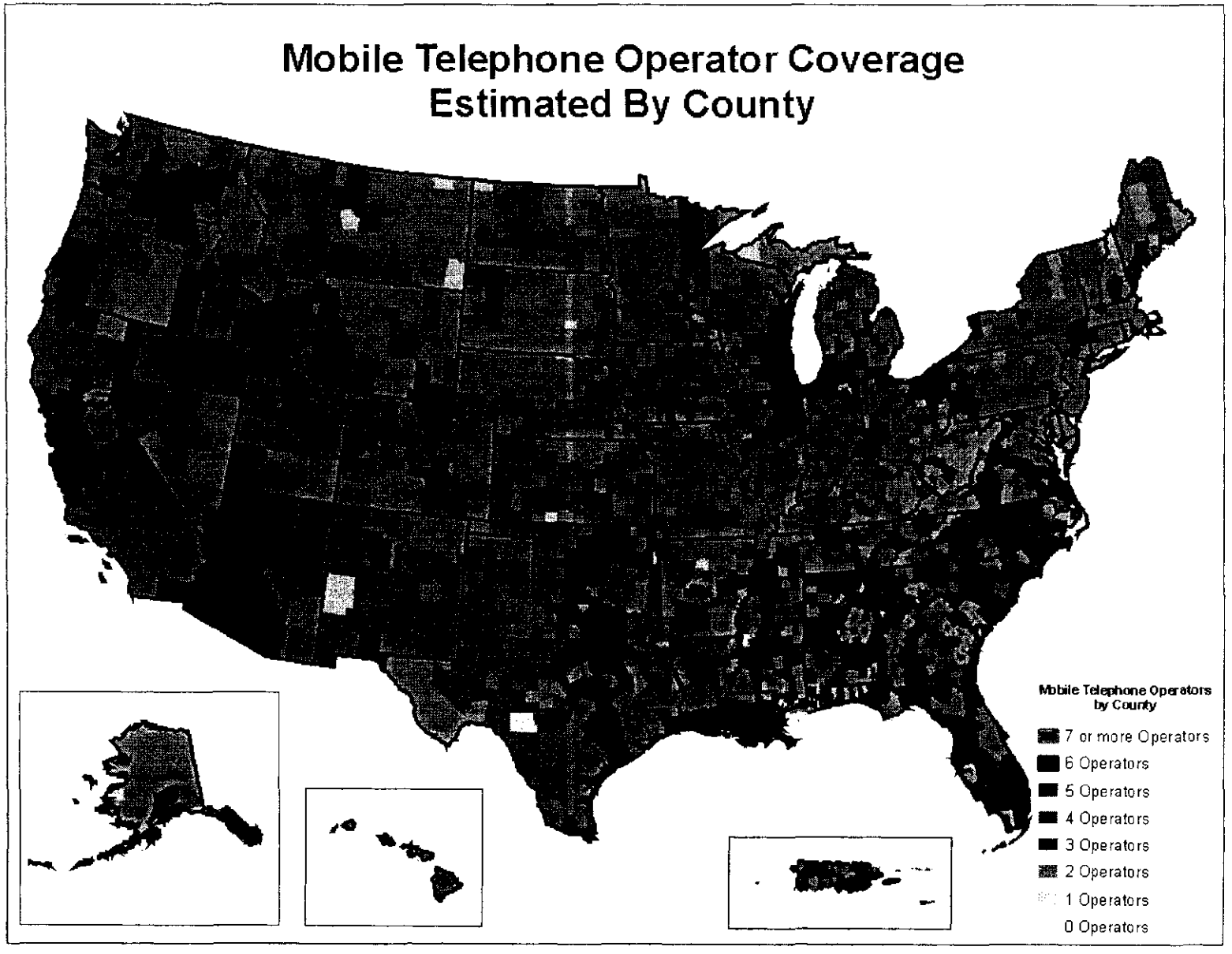
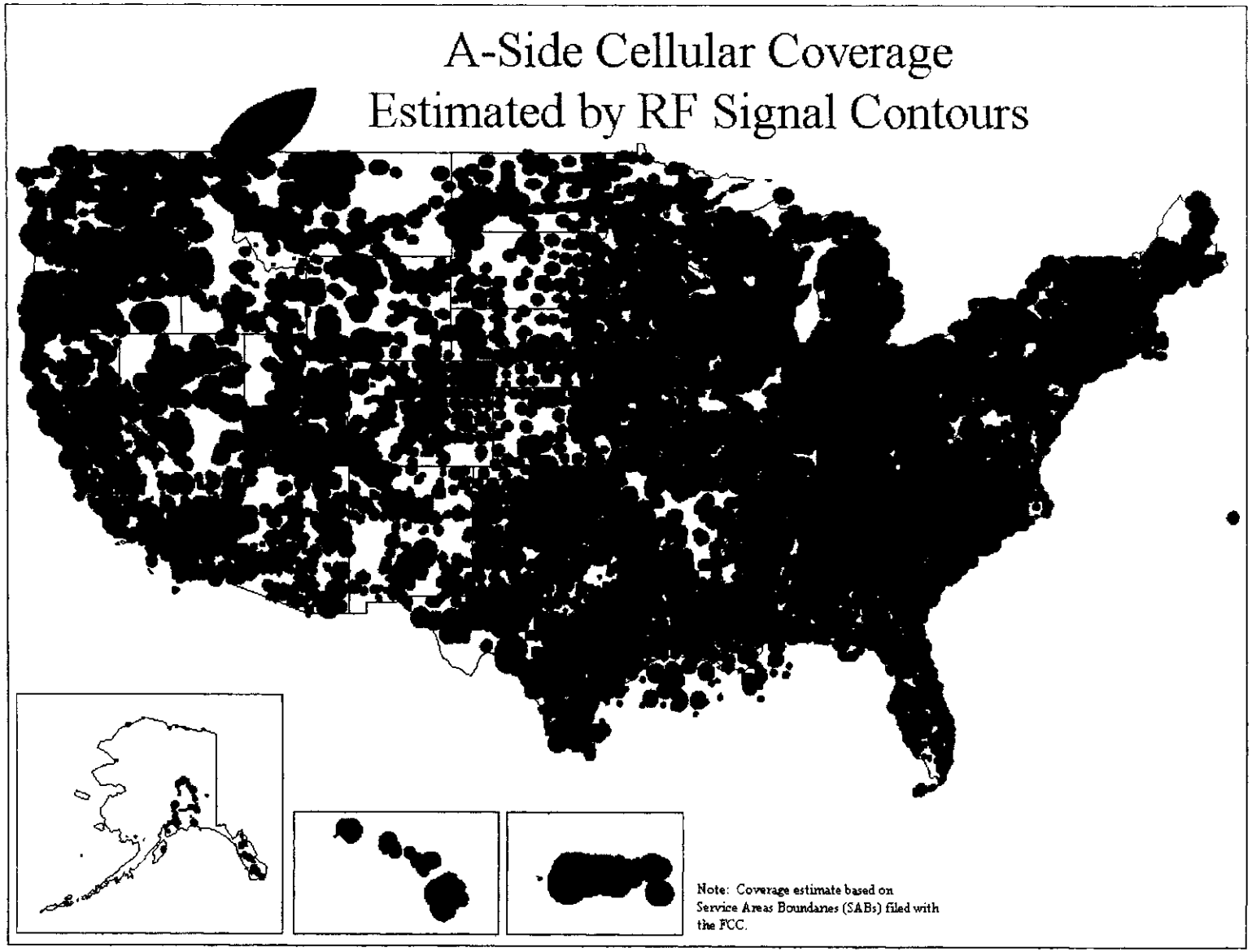
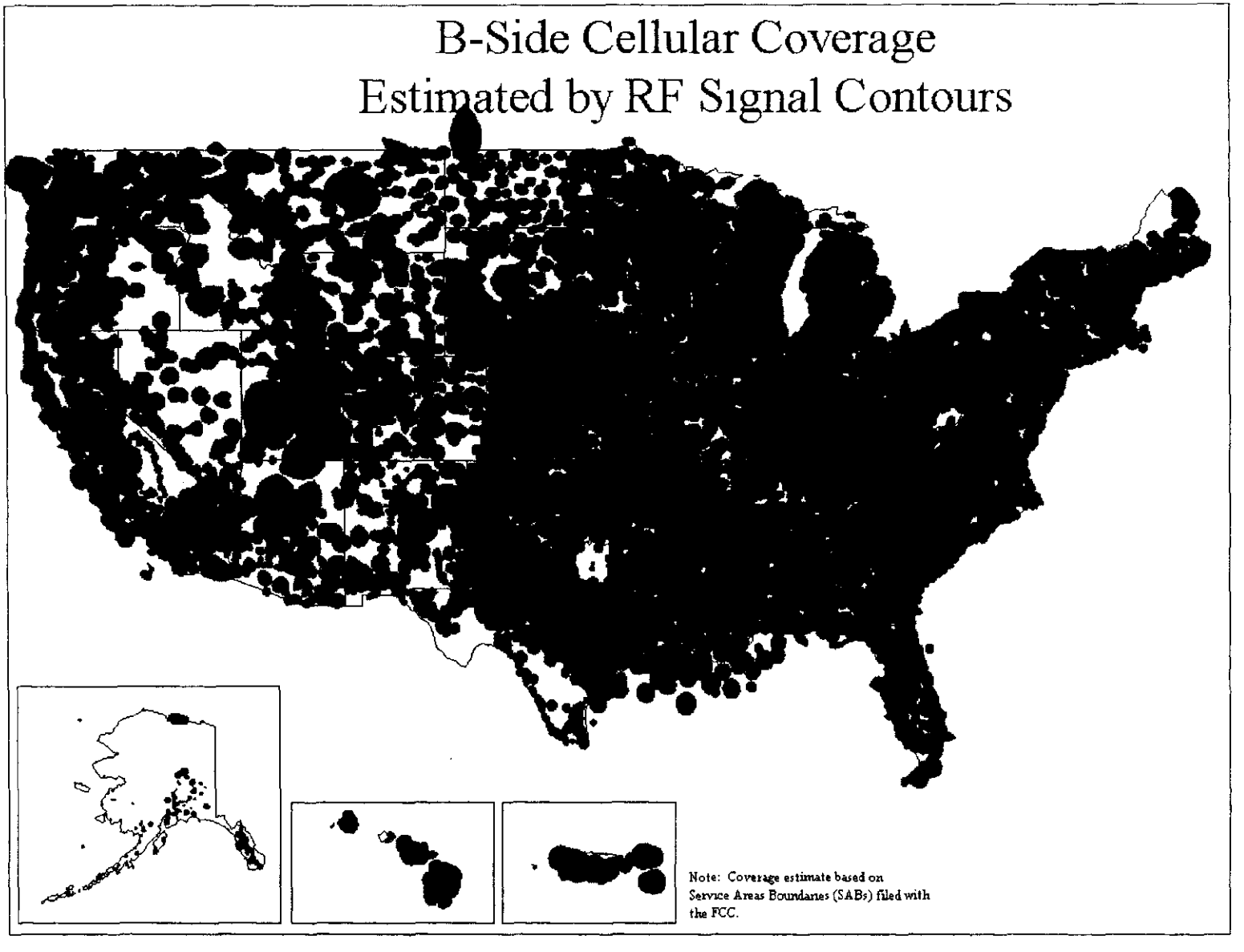
Map 1


Mobile Telephone Operator Coverage
Estimated By County
Mobile Telephone Operators by County
7 or more Operators
6 Operators
5 Operators
4 Operators
3 Operators
2 Operators
1 Operators
0 Operators

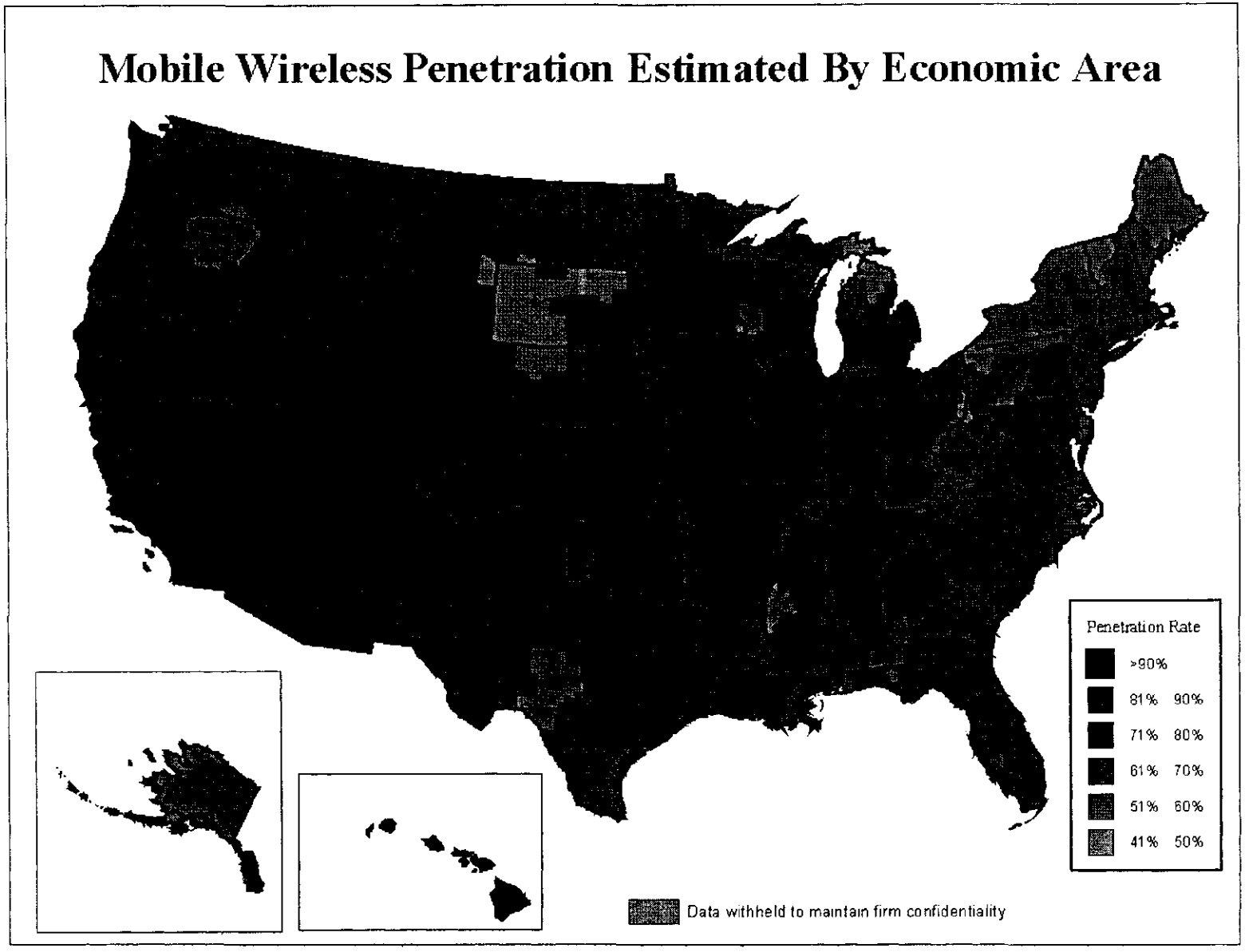
Map 2


A-Side Cellular Coverage
Estimated by RF Signal Contours
Note: Coverage estimate based on Service Areas Boundaries (SABs) filed with the FCC.

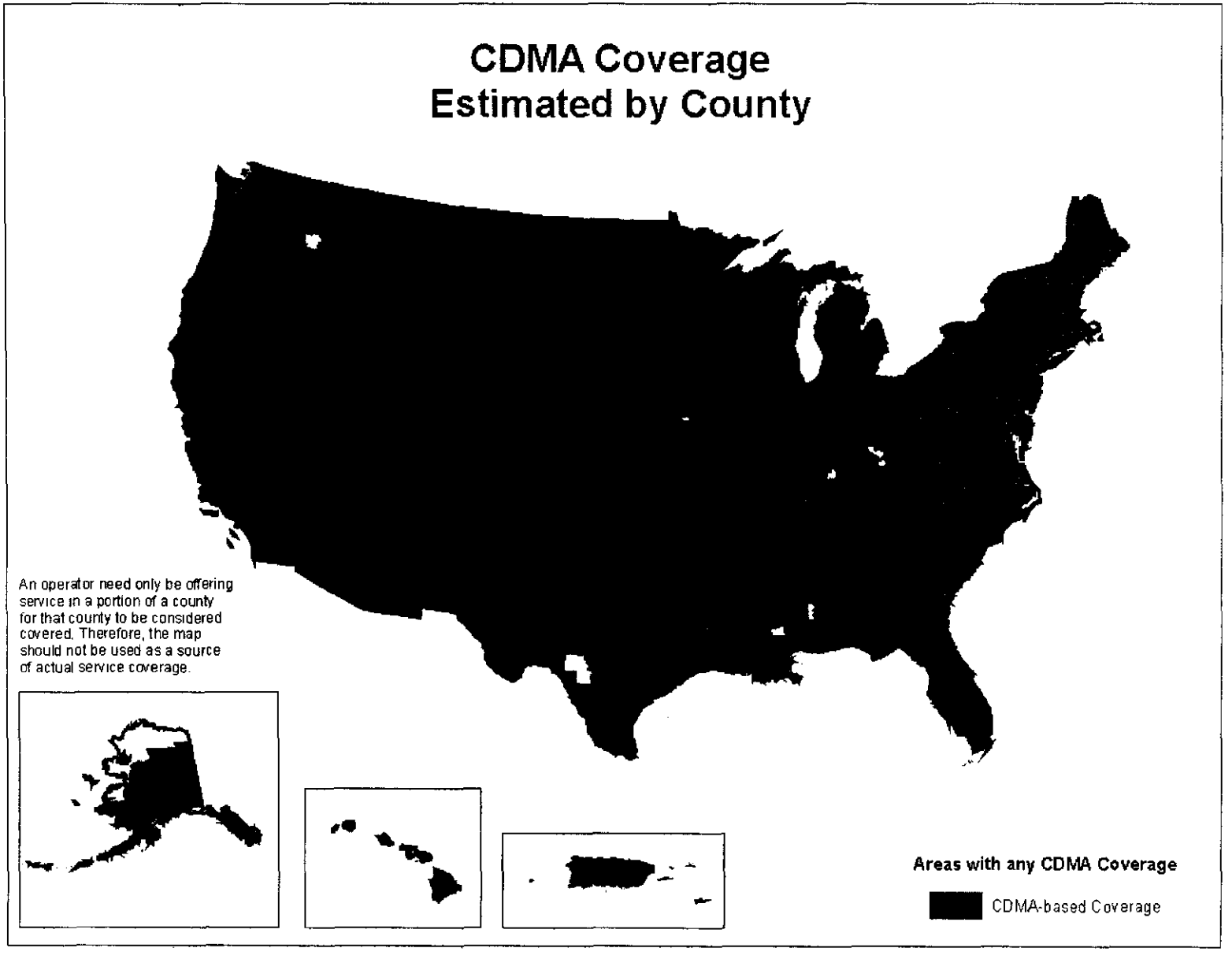
Map 3


B-Side Cellular Coverage
Estimated by RF Signal Contours
Note: Coverage estimate based on Service Areas Boundaries (SABs) filed with the FCC.

Map 4


Mobile Wireless Penetration Estimated By Economic Area
Penetration Rate
>90%
81% 90%
71% 80%
61% 70%
51% 60%
41% 50%
Data withheld to maintain firm confidentiality

Map 5


CDMA Coverage
Estimated by County
An operator need only be offering service in a portion of a county for that county to be considered covered. Therefore, the map should not be used as a source of actual service coverage.
Areas with any CDMA Coverage
CDMA-based Coverage