

- **Wireline and Terrestrial Fixed Wireless Broadband.** Facilities-based, fixed-broadband providers must report the number of subscribers at the census-tract level, broken down by technology and speed tiers; and the percentage of subscribers that are residential.⁴⁸
- **Terrestrial Mobile Wireless Broadband Services.** These providers must submit broadband subscriber totals on a state-by-state basis, rather than at the census-tract level, and must report on the census tracts that “best represent” their broadband service footprint for each speed tier in which they offer service.⁴⁹

2. Limitations

22. Form 477 Data are subject to many of the same limitations as the SBDD Data. For example, Form 477 does not include a speed tier exactly matching our 4 Mbps/1 Mbps broadband threshold service.⁵⁰ There also are several unique challenges to using the Form 477 Data to assess broadband deployment.

a. Form 477 Data Do Not Directly Measure Deployment or Availability

23. The Form 477 Data measure subscribership and are not a direct measure of where broadband service has been deployed or is available. We therefore must make assumptions about the relationship between subscribership in an area and the extent of deployment or availability in that area. Our analysis assumes broadband deployment is uniformly distributed across a given area, notwithstanding that deployment may not be uniform. As the geographic area used in our analysis increases in size and heterogeneity, the accuracy of our analysis is likely to decrease. As a result, there may be increased reason to question the accuracy of our deployment estimates based on 477 Data for the relatively large census tracts in the less populated parts of the country, for heterogeneous census tracts, and for counties.

b. Our Use of a Subscribership Threshold May Not Accurately Represent Actual Subscribership or Deployment

24. Our analysis of subscribership data to determine deployment may lead us to over-estimate the deployment of broadband networks because we assume that broadband is deployed across an entire area if the number of subscribers exceeds a *de minimis* threshold of 1 percent subscribership (as discussed below), even if the area is very large.⁵¹ Thus, we categorize a census tract or a county as entirely served if subscribership is at least 1 percent and as entirely unserved if subscribership is less than 1 percent. The SBDD Data indicate, however, that census tracts (and, by extension, counties) frequently have a mix of served and unserved areas.⁵² It therefore is likely that many of the areas we deem to be either fully served or fully unserved based on the Form 477 Data are in fact partially served.

⁴⁸ Form 477 specifically distinguishes residential from business customers. See *2004 Broadband Data Gathering Order*, 19 FCC Rcd at 22349, para. 16.

⁴⁹ See *2008 Broadband Data Gathering Order*, 23 FCC Rcd at 9698–99, para. 16.

⁵⁰ See *supra* *Seventh Broadband Progress Report* paras. 28–34.

⁵¹ For the 66,275 census tracts in our analysis for which we have land area, the average size census tract is 53.44 square miles. For the 3,232 counties in our analysis, the average county land area is 1,095 square miles.

⁵² The SBDD Data, which are collected by census block, indicate that 26.2 million Americans are unserved. These unserved Americans reside in 782,267 census blocks which have a total population of 31.6 million. These 26.2 million unserved Americans also reside in 25,968 census tracts, which have a total population of 128.9 million.

c. Subscribership Data May Undercount Deployment of High Speed Broadband

25. Subscribership data may underestimate the deployment of broadband networks that can operate at higher speeds because broadband networks may be capable of higher speeds than are offered commercially. For example, fiber-to-the-premises infrastructure is probably capable of delivering services at 100+ Mbps, but such speeds may not be offered by the provider. Or high-speed services may be offered, but priced such that they only attract fewer than 1 percent of potential subscribers in an area. In such cases, subscribership data may not signal that a broadband network is capable of providing high-speed service.

26. In addition, we are unable to determine which census tracts or counties have mobile service at a given speed because we collect subscribership data for mobile services only at the state level.

d. Filers Make Errors in Reporting Data

27. We continue to find reporting errors in the Form 477 broadband subscribership data.⁵³ Among other errors, we continue to find census tracts for which the reported number of residential subscribers for many speed combinations exceeds the total number of households in that tract.⁵⁴ It is therefore likely that subscribers are undercounted in other census tracts, on the assumption that providers are more likely to misreport where their subscribers are located than over-report their total number of subscribers.⁵⁵ We are unable to determine the extent to which this problem is due to inaccurate categorization of business customers as residential customers. Absent an audit, we have no means to determine the incidence of under-reporting subscribers in census tracts.⁵⁶ We continue to work with filers to address this issue.

28. Because of continuing questions about the accuracy of the data submitted by census tract, we report the results of broadband deployment analysis by both census tract and county.⁵⁷ We find that we must weigh the costs of over-stating the deployment of broadband by aggregating to the county level (which may be compounded by our use of the 1 percent *de minimis* threshold discussed below) against the benefits of a finer geographic analysis using census-tract data. We note that the number of unserved we

⁵³ MARCH 2011 IAS REPORT at 82 (explaining that the data as filed state that some census tracts have a share of households with high-speed connections above 100 percent).

⁵⁴ As of June 2010, the number of subscribers exceeds households, for the 768 kbps/200 kbps speed tier for 6,440 of the 66,287 census tracts in our analysis. The corresponding figures for the 3 Mbps/768 kbps speed tier is 2,330 census tracts and 1,305 census tracts for 6 Mbps/1.5 Mbps, out of this same total. See Form 477 Data; 2009 GeoLytics data.

⁵⁵ There are some instances where the number of subscriptions could exceed the number of homes in an area, for example, college campuses.

⁵⁶ We note that for 3 Mbps/768 kbps broadband services, we find that only 7 of the 3,232 counties in our analysis have a residential subscriber count exceeding the number of households; whereas for 768 kbps/200 kbps services, 27 of the counties in our analysis have a residential subscriber count exceeding the number of households in the area.

⁵⁷ See MARCH 2011 IAS REPORT at 82 (“Possible explanations of ratios at or above 100% include (1) geocoding misallocations of service locations to census tracts; (2) proper allocation of connections to the county level by some filers, but improper allocation of all connections to a single tract in the county; (3) possible overestimation of residential connections in service plans for which the customer base is primarily residential; and (4) connections at seasonally or occasionally occupied housing units, such as vacation homes, while the household is counted elsewhere. The numbers of households in census tracts that were used to generate the estimated ratios are themselves estimates (for 2010, from GeoLytics, Inc.), which could have an independent effect.”) We continue to find that the number of outliers is substantially reduced when estimates are made for individual counties rather than for individual census tracts.

identify in our analysis of census-tract subscription data is closer to the number of unserved derived from SBDD Data; census-tract-level Form 477 Data are likely accurate for many filers, and may provide a more meaningful analysis of subscription rates than the county-level data.

e. The One Percent *De Minimis* Threshold Presents Risks of Inaccuracies

29. Using subscribership data as an indicator of deployment necessarily involves an assumption about this relationship, which we describe as a “subscription threshold” or “*de minimis* threshold.” In this report, we continue to use the 1 percent *de minimis* threshold used in last year’s report. Specifically, we assume that broadband has not been deployed in an area if less than 1 percent of the households in that area subscribe to broadband.⁵⁸ Conversely, we assume that broadband has been deployed in an area if at least 1 percent of the households in that area subscribe to broadband. We acknowledge this threshold could be set at different levels and that there is no threshold that will be appropriate in all circumstances. As shown in our example below, our use of a conservative (i.e., low) subscribership threshold for determining whether a geographic area is served means that a small number of broadband subscribers in an area will cause us to find that broadband has been deployed to a much larger number of households.

30. It may be appropriate to use a higher *de minimis* threshold, particularly as adoption rates rise. For example, if broadband service providers continue to file flawed census-tract-level data and we therefore need to analyze data at the county level, the use of the 1 percent threshold is likely to understate significantly the actual number of unserved households. It may be appropriate to use a higher threshold in such a circumstance to ensure that higher levels of service in densely populated parts of a given county do not mask the fact that less dense areas do not have access to broadband. Even within a census tract, it is possible that the 1 percent threshold leads to over-estimates of broadband deployment. Ultimately these challenges are symptoms of using subscription data at a relatively coarse geography to estimate the deployment of broadband networks.

31. Table 9 below presents a sensitivity analysis showing how our estimates based on the June 2010 Form 477 Data would be affected by raising the *de minimis* threshold. Note that the interaction of the choice of geography and the *de minimis* threshold can be significant. In particular, raising the 1 percent threshold to 5 percent or 25 percent causes the estimated number of unserved Americans to rise sharply.

Area	Metric	1% Threshold	5% Threshold	25% Threshold
Census Tract	Unserved Population (MMs)	23.9	51.0	145.3
	Unserved Households (MMs)	8.9	18.9	53.8
County	Unserved Population (MMs)	12.2	31.8	105.2
	Unserved Households (MMs)	4.6	12.0	39.9

3. Comparison of the National Broadband Map and Form 477 Estimates

32. Because of the significant differences between the SBDD and Form 477 Data, and the methodologies suitable for analyzing each type of data, any comparisons of the results should be interpreted with caution. For example, the unserved Americans identified by the Form 477 subscription

⁵⁸ For each area we examine, we define the subscription rate as the number of residential connections that have a service that is at least 3 Mbps/768 kbps divided by the number of households in the area. See *supra* *Seventh Broadband Progress Report* n.128.

data are distributed across 6,096 of the 65,896 census tracts for which we have complete Form 477 Data and household count data. In contrast, the unserved Americans identified by the SBDD Data are distributed across 25,968 of the 66,112 census tracts⁵⁹ for which there is complete SBDD Data and population data. This discrepancy arises because of the larger minimum geographic reporting area used by Form 477, compared to the more granular census block reporting in the SBDD Data. As a result, Form 477 Data analysis necessarily categorizes each census tract (or county) as either wholly served or unserved, while the SBDD Data can instead measure the fraction of each census tract with access to broadband using a more continuous variable. It may therefore be a coincidence that the SBDD Data and Form 477 subscribership data indicate a similar number of Americans unserved by fixed broadband services meeting the 3 Mbps/768 kbps speed threshold.⁶⁰

33. Tables 10 and 11 below demonstrate this point by illustrating the sensitivity of our nationwide estimates of the number of unserved individuals and households, respectively, to the choices of:

- data source and geographic unit (SBDD vs. Form 477; census tract vs. county levels)
- speed threshold (768 kbps/200 kbps vs. 3 Mbps/768 kbps vs. 6 Mbps/1.5 Mbps)
- technology bundle (fixed broadband technologies using Form 477 and SBDD Data vs. fixed and mobile broadband technologies using SBDD Data).⁶¹

34. The data that are shown in the report are highlighted in italics. These data show that increasing the speed threshold used (moving from left to right in any row) significantly increases the number of those considered unserved using either data source. For example, using SBDD Data for fixed broadband, moving from a target speed of 768 kbps/200 kbps to 6 Mbps/1.5 Mbps increases the number of unserved from just under 16 million to more than 62 million. Including mobile technologies (comparing the last row in each table with the first) results in fewer unserved, but that effect is much larger at lower speeds. At 768 kbps/200 kbps, more than two-thirds of the unserved by fixed technology have a mobile option; at 6 Mbps/1.5 Mbps, fewer than 10 percent of the unserved have a mobile option. Regardless of which data source or speed threshold we rely upon to estimate broadband deployment, however, the data show that millions of Americans live in areas where broadband has not been deployed.

⁵⁹ More precisely, the unserved Americans identified by the SBDD Data are located in 782,267 out of 4.5 million census blocks which are located in the 25,968 census tracts identified above.

⁶⁰ The SBDD Data suggest that approximately 26.1 million people are unserved and the Form 477 census-tract subscription data suggest that 23.9 million people are unserved. The SBDD Data suggest that 9.2 million households are unserved while Form 477 Data suggest that 8.9 million households are unserved.

⁶¹ We are unable to include mobile wireless data in our analysis of the Form 477 Data because it is only collected at the State level. From the SBDD Database, we include the following broadband services (with corresponding technology codes): Asymmetric xDSL (10), Symmetric xDSL (20), Other Wireline (all copper-wire based technologies other than xDSL) (30), Cable Modem—DOCSIS 3.0 (40), Cable Modem—Other (41), optical carrier (fiber to the home) (50), Terrestrial Fixed Wireless (provisioned/equipped over licensed spectrum (71) or over spectrum used on an unlicensed basis (70)), Electric Power Line (90), and a catch all category, All Other (0). For our analysis of Form 477 Data, we include the following fixed broadband services: Asymmetric xDSL, Symmetric xDSL, Other Wireline (all copper-wire based technologies other than xDSL, Cable Modem, optical carrier (fiber to the home), Terrestrial Fixed Wireless (provisioned/equipped over licensed spectrum or over spectrum used on an unlicensed basis), Electric Power Line, Satellite, and a catch all category, All Other.

	768 kbps/200 kbps	3 Mbps/768 kbps	6 Mbps/1.5 Mbps
Fixed Broadband SBDD Data	15.8 5.1%	26.2 8.4%	62.3 20.1%
Fixed Broadband Form 477 Data by Census Tracts	1.6 0.5%	23.9 7.7%	83.4 26.9%
Fixed Broadband Form 477 Data by County	0.6 0.2%	12.2 3.9%	62.0 20.0%
Fixed and Mobile Broadband SBDD Data	5.2 1.7%	14.0 4.5%	58.3 18.8%

	768 kbps/200 kbps	3 Mbps/768 kbps	6 Mbps/1.5 Mbps
Fixed Broadband SBDD Data	5.8 4.8%	9.2 8.0%	22.6 19.7%
Fixed Broadband Form 477 Data by Census Tracts	0.6 0.5%	8.9 7.8%	31.6 27.6%
Fixed Broadband Form 477 Data by County	0.2 0.2%	4.6 4.0%	23.8 20.8%
Fixed and Mobile Broadband SBDD Data	1.9 1.7%	5.0 4.3%	21.1 18.4%

4. Modest Increase in Household Subscription Rates

35. The Form 477 Data also show an increase in household subscription rates.⁶³ In the report, we showed how the overall subscription rates for broadband service have increased for all measured broadband speed tiers over six-month periods between December 2008 and June 2010.⁶⁴ Because we find significant variation in subscription rates across the country, we also show in Table 12 how subscription rates have changed in areas with relatively low and relatively high subscription rates (i.e., the first and third quartiles) between December 2008 and June 2010. These data indicate that broadband subscription rates are rising modestly across most of the measured broadband speeds and subscription rate quartiles.

36. Specifically, Table 12 shows that the subscription rates in the census tract and county at the 25th percentile (i.e., the geographic area with a subscription rate higher than the subscription rates in 25

⁶² As noted in paragraph 38 of this Appendix F, we tried to use the same source of population and household data for our analysis of the SBDD Data and the Form 477 Data. *See infra* para. 38. Anomalies in the U.S. Territories population data cause some questionable results, however. *See supra* App. E (Unserved Counties Form 477 Data (Population, Population Density, & Average Per Capita Income)). If we had instead used the ACS Five-Year Estimates 2005–2009 census tract population data for our Form 477 Data analysis, the unserved population figures for fixed-broadband Form 477 Data by census tract would have been, respectively, 1.5 million, 25.0 million, and 84.4 million; and the results for fixed-broadband Form 477 Data by county would have been, respectively, 258,592, 12.2 million, and 62 million.

⁶³ The availability of Form 477 Data for multiple time periods allows us to examine how subscription rates are changing. Because the SBDD Data are new, we cannot yet conduct a similar analysis of the SBDD Data.

⁶⁴ *See supra* *Seventh Broadband Progress Report* tbl. 7 (Overall Subscription Rate for Broadband Services (December 2008 to June 2010) (showing data for 768 kbps/200 kbps and faster, 3 Mbps/768 Mbps and faster, and 6 Mbps/1.5 Mbps and faster).

percent of all other geographic areas) and the 75th percentile (i.e., the geographic area with a subscription rate higher than the subscription rates in 75 percent of all other geographic areas) have risen across all measured broadband speed tiers between December 2008 and June 2010. Table 12 shows, for example, that in December 2008, one-quarter of all census tracts had subscription rates below 30.25 percent. In June 2010, one-quarter of all census tracts had subscription rates below 35.63 percent.

	First Quartile (25 th Percentile)		Third Quartile (75 th Percentile)	
	December 2008	June 2010	December 2008	June 2010
Form 477 Census Tract				
768kbps/200 kbps	30.25%	35.63%	69.38%	76.47%
3 Mbps/768 kbps	2.93%	8.39%	38.50%	48.80%
6 Mbps/1.5 Mbps	0.00%	0.33%	4.04%	29.69%
Form 477 County				
768kbps/200 kbps	23.12%	29.46%	47.08%	55.72%
3 Mbps/768 kbps	0.46%	2.15%	13.06%	26.86%
6 Mbps/1.5 Mbps	0.00%	0.00%	0.47%	4.67%

C. DEMOGRAPHIC DATA SOURCES

37. To complete our demographic analysis of the SBDD Data and the Form 477 Broadband Data, we supplement these data with data from 2009 GeoLytics data, the ACS Five-Year Estimates 2005–2009, and the 2000 Census. The ACS Five-Year Estimates 2005–2009 are based upon surveys conducted from January 1, 2005 to December 31, 2009 and are significant because these data are the most recent demographic information to date.⁶⁵ The ACS data do not represent any one year or the midpoint of a period, but are estimates for the time period 2005–2009. The ACS surveys were conducted only for the fifty states, the District of Columbia, and Puerto Rico; they did not include American Samoa, Guam, Northern Mariana Islands, or the U.S. Virgin Islands.

38. *Population and Household Data.* To the extent possible, we used the same population and household data for this report as was used for the National Broadband Map. Thus, our primary source of population data is the 2009 GeoLytics data. Because GeoLytics population and household counts are not available at the census-block level for the U.S. Territories, population for the U.S. Territories was distributed uniformly across each U.S. Territory's component areas. Hence the population data for the U.S. Territories used in the analysis of the SBDD Data and the Form 477 Data may not reflect actual populations for those areas.⁶⁶ In addition, because of missing data for 88 census tracts for which we have Form 477 subscription data, we supplemented the population data used in our analysis of the SBDD Data with the most recent population data available. We used ACS Five-Year Estimates 2005–2009 for 17 census tracts in Colorado and one census tract in Virginia, and we use 2000 Census Data for all of the

⁶⁵ See Census Bureau, Department of Commerce, 5-Year Release Details, http://www.census.gov/acs/www/data_documentation/2009_5yr_data/.

⁶⁶ See, e.g., App. E (Unserved Counties Form 477 Data (Population, Population Density, & Average Per Capita Income) (American Samoa, Rose Island).

census tracts in Guam and Northern Mariana Islands.⁶⁷

39. *Income Measures.* We report three income measures: per capita income, median household income, and the poverty rate (the proportion of the population living in poverty). Per capita income and median household income are measured in 2009 Inflation-Adjusted Dollars. These income measures are available from the ACS Five-Year Estimates 2005–2009.

40. *Educational Attainment.* We measure educational attainment as the portion of the population aged 25 years old and older that has attained at least an Associates Degree. These data are available from the ACS Five-Year Estimates 2005–2009.

41. *Population Density.* Population density is the ratio of the total population residing in the area divided by the land area of the area. We use the most recent population data available for each area. Our data source for land area is the 2000 Census.

42. *Urban Core.* A census tract is defined as being in the “urban core” if it has a land area less than 3 square miles and a population density of at least 1,000 people per square mile. This definition is consistent with the Census Bureau’s proposal for identifying initial urban area core areas for the 2010 Census.⁶⁸ The urban population figures we report are the total population residing in a census tract in the urban core. At the county level, the urban population is the sum of the urban population residing in each urban core census tract that lies within the county.

43. *Non-White Proportion.* We examine the portion of the population in the area that self-identifies solely as being White and the portion that does not self-identify solely as being White as reported in the ACS Five-Year Estimates 2005–2009. Survey respondents to the ACS can select multiple races to which they identify. The results of the ACS Five-Year Estimates 2005–2009 suggest that approximately 2.2 percent of the population identify with more than one race, and the early results from the 2010 Census indicate that approximately 2.9 percent of the population identify with more than one race.⁶⁹ Thus, to simplify the assessment of how subscription patterns may be affected by the racial demographics of the geographic area of interest, we examine the proportion of the population that do not self-identify solely as White.

44. *Tribal Lands.* Our assessment of tribal lands is conducted by examining census tracts that overlap with the following Census Bureau categories: (1) Joint Use Areas; (2) Federally Recognized American Indian reservation that does not have associated off reservation trust lands; (3) Federally recognized American Indian off-reservation trust land area without any associated reservation; (4) Federally recognized American Indian reservation that has associated off-reservation trust land; (5) Statistical entity identified for a federally recognized American Indian tribe that does not have a reservation or identified off-reservation trust land; (6) Off-reservation trust land associated with Federally recognized American Indian reservation that has associated off-reservation trust land; (7) Alaskan Native village statistical area; and (8) Hawaiian Home Lands established by the Hawaiian Homes Commission

⁶⁷ See Census Bureau, Census 2000, Summary File 1, <http://www.census.gov/census2000/sumfile1.html> (providing links to access the data); ACS Five-Year Estimates 2005–2009.

⁶⁸ See *Proposed Urban Area Criteria*, 75 Fed. Reg. at 52182.

⁶⁹ See ACS Five-Year Estimates 2005–2009; CENSUS BUREAU, DEPARTMENT OF COMMERCE, OVERVIEW OF RACE AND HISPANIC ORIGIN: 2010, 2010 CENSUS BRIEFS 2, 4 (March 2011), available at <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf> (stating that in the 2010 Census, “[t]here are 57 possible multiple race combinations involving the five OMB race categories and Some Other Race” while “White alone” accounts for 72 percent of all people living in the United States).

Act of 1921.⁷⁰ However, because Tribal lands generally compose a small portion of each census tract, we focus our analysis on those census tracts in which the Tribal lands comprises at least 50 percent of the land area within the census tract.

⁷⁰ See Census Bureau, Geographic Terms and Concepts—American Indian, Alaska Native, and Native Hawaiian Area, http://www.census.gov/geo/www/2010census/gtc/gtc_aiannha.html#anrc.

APPENDIX G

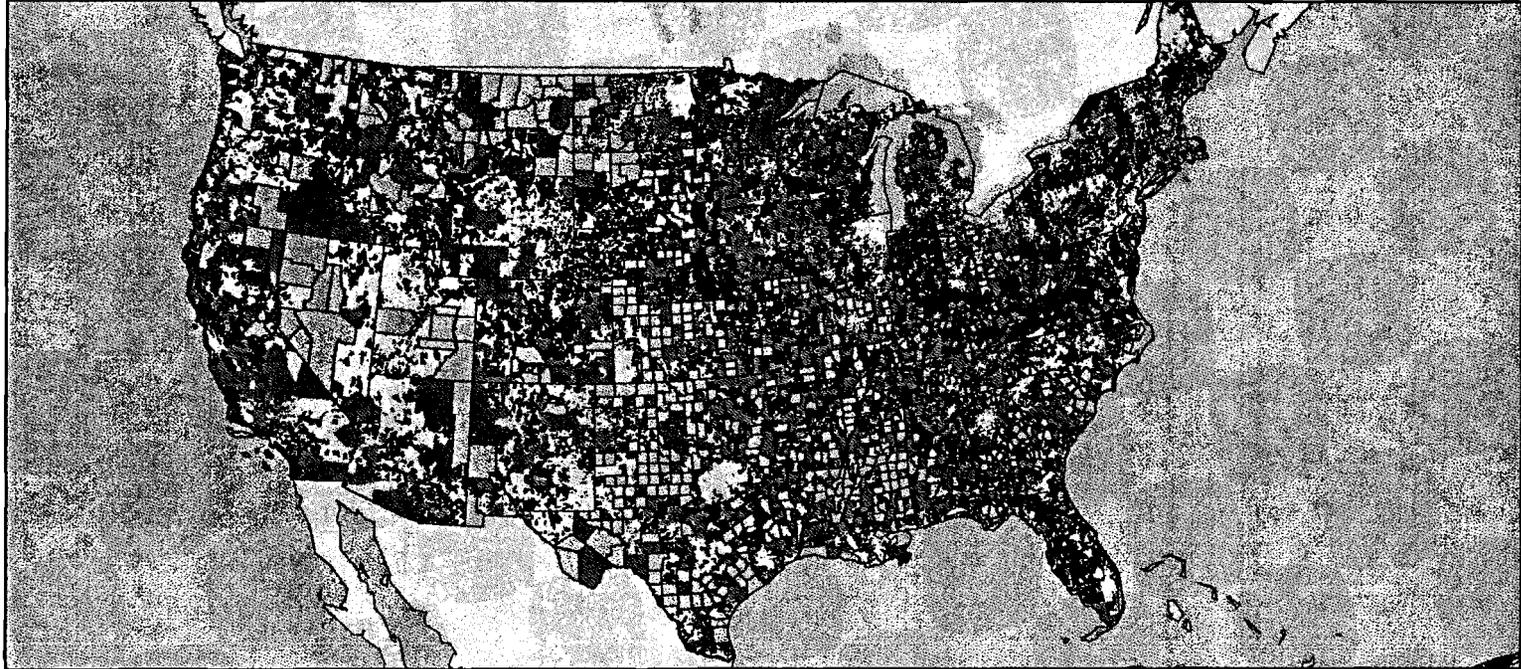
**Commission's Report on Internet Access Services:
Status as of June 30, 2010**

This report can be found on the FCC website at
http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-305296A1.pdf.

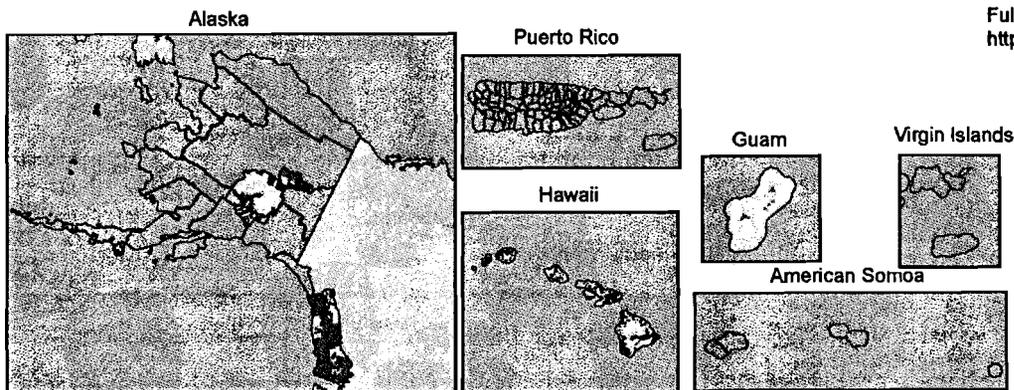
APPENDIX H

Map of Areas Unserved by (or Lacking Data On) Broadband

Federal Communications Commission Areas Unserved by (or Lacking Data On) Broadband



89



Full report can be found at:
<http://www.fcc.gov/reports/seventh-broadband-progress-report>

Legend

-  Served w/ Broadband
-  477 - Unserved Counties
-  477 - Unserved Tracts
-  SBDD - Unserved or Unreported

**STATEMENT OF
CHAIRMAN JULIUS GENACHOWSKI**

Re: Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, GN Docket No. 10-159, Seventh Broadband Progress Report and Order on Reconsideration

Today the Commission issues its latest Broadband Progress Report, fulfilling our Congressionally-mandated duty to conduct an “inquiry concerning the availability of advanced telecommunications capability to all Americans,” and to “determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.” This year’s Report shows that our country has more work to do to increase broadband availability for all Americans.

We have reached this conclusion using the best data available, including for the first time data from the National Broadband Map. Combined with other sources, it has given us the clearest picture we have ever had of the state of broadband deployment in the United States.

That picture shows that more than 20 million Americans live in areas where they still can’t get basic broadband. And most of these areas face no prospect of being served in the near future. That’s not reasonable or timely, and it’s far short of “all” Americans.

In addition, approximately one third of Americans – more than 100 million people – don’t subscribe to broadband. America’s broadband adoption rate is approximately 67 percent – compared with over 90 percent in South Korea and Singapore. Mobile broadband adoption has accelerated since 2009. However, Pew’s Internet and American Life Project pointed out last year that home adoption of broadband Internet access service appears to have “slowed dramatically” in recent years.

These gaps in broadband deployment and adoption are such important national challenges in part because the costs of being shut out of our broadband economy are so high, and rising. More and more every day, not having broadband is a major barrier to finding and applying for a job, getting a world-class education, or obtaining access to health care. Today, lack of access to broadband is a much bigger obstacle to the opportunities that are essential for consumer welfare and America’s economic growth and global competitiveness than it was even a few years ago.

Some may believe these facts show that we’re doing well enough. I don’t.

Because making broadband available to all Americans matters. It matters to our economy. It matters to driving massive private investment and innovation in the U.S., it matters to growing our exports and competing globally, and it matters to addressing major national challenges like improving education, health care, energy, transportation, and public safety.

Our conclusion that broadband is not being deployed in a reasonable and timely fashion in no way shortchanges the significant progress that has been made, in both the private and public sectors, over the past several years. The private sector continues to invest tens of billions of dollars in broadband infrastructure each year – more than \$60 billion in capital expenditures in 2010 alone – expanding capacity, increasing speeds on fixed networks, and rolling out next-generation mobile services like 4G.

Implementing recommendations of the National Broadband Plan, the FCC has unleashed

additional spectrum for mobile broadband; launched the Broadband Acceleration Initiative to reduce the costs and time required to deploy broadband by reforming infrastructure policies; reduced the cost of utility pole attachments; promoted greater utilization of spectrum over Tribal lands; and improved and modernized our E-rate program, which helps provide broadband for schools and libraries. And our partners at NTIA and RUS have invested billions to spur private sector broadband deployment through the BTOP and BIP programs.

Two years ago, few were talking actively about the importance of broadband for our country. Today, there is broad agreement – among business leaders throughout the economy; consumer advocates; academics and other experts; and local, state, Tribal, and federal policymakers from across the political spectrum – that increasing broadband deployment, adoption, and use is a top national priority.

But too many Americans are still being left behind. This is particularly concerning as data suggests that other developed countries like South Korea and Germany are doing better than America on some key broadband metrics. To ensure America's continued global competitiveness, our pace of improvement must quicken.

Under Section 706 of the Telecommunications Act, the Commission has a statutory mandate to “remove barriers to infrastructure investment and promote competition in the telecommunications market,” which we're taking seriously. We're reforming our Universal Service Fund and the related intercarrier compensation system, transforming it from an inefficient 20th century telephone program to an accountable, effective, fiscally responsible 21st century broadband program. We're unleashing spectrum for mobile broadband. And we're focused on reducing barriers to broadband deployment, including through our Technological Advisory Council, and reducing barriers to broadband adoption. These steps will help achieve our shared goals and advance and accelerate the private sector's work to increase broadband deployment and adoption.

I thank the staff of the FCC, particularly the Wireline Competition Bureau, for their hard work on this item.

**STATEMENT OF
COMMISSIONER MICHAEL J. COPPS**

Re: *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act, GN Docket No. 10-159, Seventh Broadband Progress Report and Order on Reconsideration*

With release of this report, it is clear that the Commission is taking seriously its mandate under section 706 of the Telecommunications Act to determine whether advanced telecommunications capability is being made available to all Americans in a reasonable and timely fashion. Congress reaffirmed the importance of this inquiry with the more recent passage of the Broadband Data Improvement Act and the requirement that the Commission make this critical examination into broadband availability each year. Last year, with the Sixth 706 Report, the Commission finally produced a credible effort to deliver a report based on data of the quality and granularity necessary to be truly responsive to Congress.

So I applaud the work of the Bureau and the Chairman to ensure that the Commission is living up to its statutory responsibilities. The findings of the present inquiry, however, give us much less to cheer about. As many as 26 million Americans are unserved by broadband today and at least one-third of Americans do not subscribe to high-speed Internet access service. Every day, broadband becomes more central to the economic and civic life of our nation. Access denied is opportunity denied—we simply cannot afford to have millions of our fellow citizens on the wrong side of a digital divide.

In this year's report, the Commission has gone further than ever before to enhance our analysis of whether and to who broadband remains unavailable. Thanks to the National Broadband Map, for the first time we are able to utilize data on actual deployment—not just the proxy of subscribership information. And we recognize that understanding whether broadband is available, as the statute directs us to do, encompasses whether or not Americans are actually taking broadband service. With the concurrent release today of the International Broadband Data Report, we also have real indicators of how the United States is measuring up against our global competitors in terms of broadband speed, price, deployment and adoption. It is clear that our country still has a long way to go to achieve world-class broadband standing.

To remedy the findings of this Report, the Commission's charge is clear—we must take immediate action so that all Americans are able to participate in the broadband era. We have already teed up many of the issues that are part and parcel of this agenda—now is the time to see them through to swift completion. The Commission has made an unprecedented commitment to reform the Universal Service Fund and Intercarrier Compensation mechanisms in the coming months. This is not something it would be nice for us to do—it is absolutely imperative for us to do. Our current system is patently ill-equipped to assist us in meeting our 21st Century broadband goals. It is equally clear how urgently we need a rational system that is more efficiently supporting broadband in rural and high cost areas of the country.

Addressing the barriers that prevent millions of Americans from broadband adoption is just as critical as promoting broadband deployment—and we know that affordability is a big part of that challenge. The Commission has begun the process of reorienting the Lifeline and Linkup programs toward supporting broadband—reforms that cannot arrive fast enough for low-income consumers.

And while today's report is our best effort yet, there are still steps we need to take to ensure that we have even more data to keep current with our statutory obligations. The Commission has teed up

many areas where we can continue to improve our Form 477—ensuring regular and systematic reporting of high-quality broadband data that must inform so many of our Commission endeavors. As the International Broadband Data Report indicates, the Commission is also working hand-in-hand with the State and Commerce Departments and OECD to obtain more globally standardized broadband data—efforts that will promote an even better understanding and comparison of our approaches to broadband with those of our global competitors.

My thanks to the many folks at the Commission who contributed to this year's Report.

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

Re: *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 10-159; Seventh Broadband Progress Report and Order on Reconsideration

I am both optimistic and pragmatic about the state of broadband deployment. We continue to take great strides to provide faster and better broadband to more Americans every year. Capital investment in fixed and mobile broadband deployment continues to be a tremendous success story. The report's only metric that permits year-to-year comparison finds that the percentage of U.S. households served by terrestrial broadband grew from 92 percent in December 2008 to 96 percent in June 2010. In the same period, the number of unserved households dropped almost in half from 8.8 million to 4.6 million.¹

Section 706 of the Telecommunications Act of 1996 requires the Commission to determine whether "advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."² In all of the reports starting with the first in 1999, the FCC has answered "yes" to that question. Last year, however, the Commission dramatically reversed course.³

Last year's negative conclusion was unsettling considering that America had made impressive improvements in developing and deploying broadband infrastructure and services. In just six years, broadband deployment skyrocketed from reaching only 15 percent of Americans in 2003, to 95 percent by the end of 2009. I cast a dissenting vote. This year's report continues with the same flawed analyses and conclusions, albeit with a novel rationale, which is discussed below. As a result, I respectfully dissent again.

¹ I share the Commission's watchfulness with respect to Form 477 subscribership data and county-level measurements, but do not believe we can simply explain away the import of the significant year-over-year improvement. Subscribership data is an imperfect proxy for deployment, but it is the best comparison tool we have today. By one metric, broadband download speed increased 34 percent last year as providers continue to roll-out higher speed offerings to meet consumer demand. Press Release, *Downstream Bandwidth for US Broadband Subs Increase by 34% in 2010*, In-Stat (Feb. 16, 2011). This substantial increase would lend some credence to the Form 477 findings of a significant growth in the number of connections that meet the Commission's speed requirements. Overall, I support the report's inclusion of the State Broadband Data and Development (SBDD) data as well as the Technical Appendix's forthright discussion about the limitations of both data sets. That said, incorporating yet another new data source complicates the Commission's ability to assess any trends over time regarding timely and reasonable deployment. I am hopeful that we can make more apples-to-apples comparisons in future reports, and look forward to a more complete data set in future SBDD releases. See Technical Appendix, ¶ 10 (detailing that over a quarter of broadband providers elected not to participate in the NTIA process); see also George S. Ford, *Challenges in Using the National Broadband Map's Data*, Phoenix Center Policy Bulletin (Mar. 2011).

² 47 U.S.C. § 1302(b) (Section 706 of the Telecommunications Act of 1996 has since been codified in Title 47, Chapter 12 of the United States Code but is commonly referred to as "Section 706").

³ See *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 09-137, *A National Broadband Plan for Our Future*, GN Docket No. 09-51, Sixth Broadband Deployment Report, 25 FCC Rcd 9556 (2010) ("*Sixth Report*"). In fact, the *Sixth Report* explicitly included in its caption and referenced findings from the National Broadband Plan that "95% of the U.S. population lives in housing units with access to terrestrial, fixed broadband infrastructure capable of supporting actual download speeds of at least 4 Mbps."

This year's report makes a surprising leap by arguing that Congress did not mean "physical" deployment when referring to "deployment" and "availability." It concedes that the Act does not define the terms "deployment" and "availability." Instead of looking to the plain statutory language to determine Congress' intent, however, the Commission relies on legislative report language to argue that even if broadband is physically deployed to a particular area but is not affordable, it is *not* considered available under Section 706. But, the actual statutory language says otherwise, stating that as part of the inquiry, the Commission should look at demographic information for "geographical areas that are *not served* by any provider of advanced telecommunications capability."⁴

Regrettably, through this attempted re-interpretation of Section 706(b), the Commission appears to continue a trend towards more regulation and ever increasing authority over broadband and the Internet. The report references barriers to infrastructure investment that include "poor digital literacy," "low broadband service quality," "affordability," and "lack of access to computers." It is unclear from this report if this Commission now contends it has authority under Section 706(b) to establish regulation to address each of these "barriers," many of which bear little nexus to infrastructure deployment.

With respect to the analysis itself, the exclusion of mobile broadband is particularly disappointing. It is hard to believe that a May 2011 broadband deployment report downplays the rapid rise of 3G service, as well as the historic levels of investment in our nation's 4G infrastructure. The Chairman has correctly noted that "3G wireless services can deliver speeds capable of handling a dramatically wide array of consumer applications."⁵

The Chairman has also observed that "mobile broadband is being adopted faster than any computing platform in history," highlighting that the United States "had 141 million 3G subscribers – one-fifth of the worldwide total and more than three times as many as any other nation, except Japan, making us the world's largest 3G market and a major reason why the U.S. has been the undisputed leader in mobile innovation."⁶

The data strongly support the Commission's focus on mobile broadband: The most recent Form 477 filings show that the number of mobile broadband connections at downstream speeds above 3 Mbps jumped from 133,000 in December 2008 to 5.3 million in June 2010.⁷ This is incredible growth. Yet, even this statistic fails to capture the subsequent significant increase in 3G and 4G penetration since June 2010. Cisco's recent analysis suggests that there are already 2.6 million mobile-only Internet consumers in North America, and that number is estimated to be 55 million by 2015.⁸ Many underserved communities have expressed a clear preference for mobile broadband options.⁹ In addition, the Commission's most recent *14th Annual Wireless Competition Report* found that over three quarters of the American population has access to at least three mobile broadband providers, up from 51 percent in just

⁴ 47 U.S.C. 1302(c) (emphasis added).

⁵ Remarks of Chairman Julius Genachowski, "The Clock is Ticking" (Mar. 16, 2011).

⁶ Remarks of Chairman Julius Genachowski, CTIA Wireless 2011 (Mar. 22, 2011).

⁷ INDUSTRY ANALYSIS AND TECHNOLOGY DIVISION, FCC, INTERNET ACCESS SERVICES: STATUS AS OF JUNE 30, 2010, Table 2 (Mar. 2011) (MAR. 2011 IAS REPORT).

⁸ *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2010–2015* (Table 6) (Feb. 1, 2011).

⁹ *Among Mobile Phone Users, Hispanics, Asians are Most-Likely Smartphone Owners in the U.S.*, NielsenWire (Feb. 1, 2011).

two years.¹⁰

This report's analysis excludes mobile broadband altogether, even while conceding that "mobile services capable of actual speeds above the 4/1 Mbps benchmark are becoming increasingly common." At a time when many operators are advancing the pace of their planned 4G network deployments, next-generation 4G is only mentioned in passing. The report does at least acknowledge that "we intend to revise our approach in future reports" to incorporate mobile broadband. That integration should have been done this year.

The exclusion of mobile broadband appears primarily to be a result of the Commission's unwillingness to revisit its arbitrary decision to define broadband as 4 Mbps downstream and 1 Mbps upstream. The Commission should never have mandated a one-size-fits-all definition of broadband. Regulators must provide a more complete picture of broadband offerings at different speed thresholds and act cautiously to avoid industry-shaping and market-distortive decisions.

If anything, the growth and popularity of mobile broadband at speeds below the Sixth Report's definition should have prompted the Commission to revisit that definition. Over half of all high-speed connections are below 3 Mbps downstream,¹¹ and the Commission's surveys find that consumers are happy with both their existing broadband service and speed.¹² Tellingly, Pew has found that only about one third of consumers pay for premium broadband services today.¹³ While it is much more likely that the Commission's broadband definition is flawed, this report seemingly concludes that there must be something significantly lacking with today's "broadband" services. I disagree.

The report is confusing and inconsistent in other ways too. For instance, it seems to take a creative and expansive approach to interpreting the phrase "all Americans" as codified by Congress in Section 706. In a breezy fashion, the report dismisses the idea that the phrase should be viewed as a "goal." Instead, it states that the phrase should have its "ordinary meaning." In the next breath, however, the report contradicts its earlier line of reasoning by leaving the door open to interpreting the meaning of "all Americans" differently at some point in the future when only a "very small number of Americans" still lack access to broadband deployment. I am concerned that such inconsistency in the Commission's interpretation amounts to arbitrary and capricious action, not to mention that this numerical moving target undercuts the effort to reach data-driven decisions.

Given that the language of Section 706 reveals a deregulatory bent,¹⁴ I expressed my concerns

¹⁰ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Fourteenth Report, 25 FCC Rcd 11407 (2010).

¹¹ Approximately 60 percent of connections (92 million out of 152 million) are below 3 Mbps downstream. MAR. 2011 IAS REPORT, Table 5. Excluding mobile offerings, approximately one-third of fixed connections are still below 3 Mbps downstream. *Id.*, Chart 2.

¹² *Broadband satisfaction: What consumers report about their broadband Internet provider*, FCC Working Paper (Dec. 2010) (finding that "51% of broadband users are very satisfied with service overall and 42% are somewhat satisfied," and that "50% of broadband users are very satisfied with the speed of their service and 41% are somewhat satisfied.").

¹³ Aaron Smith, *Home Broadband 2010*, Pew Internet and American Life Project (Aug 11, 2010).

¹⁴ Congress stated that "[i]f the Commission's determination is negative, it shall take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market." 47 U.S.C. § 1302(b).

last year that the conclusions in the *Sixth Report* could instead be used as a pretext to impose unnecessary new regulations. Unfortunately, my fears were realized only five months later. The Commission's 3-2 vote to regulate Internet network management extensively relied on the findings in the *Sixth Report* in attempting to manufacture a legal foundation for the new regulatory regime.¹⁵ Given this history, it is reasonable to be concerned that reiteration of year's conclusion in today's report may be used to bolster additional FCC regulatory efforts in other areas where Congress has not given the FCC legal authority to do so.

Institutionally, the continued unwillingness of this Commission to provide any positive statements about the state of telecommunications infrastructure and competition is troubling. We should have kept this inquiry focused on physical infrastructure as required by the statute and consistent with our past practice. Regardless of this report's conclusion, the Commission should redouble its effort to create incentives for private investment in networks and technologies that can drive broadband further and faster throughout the nation.

For these reasons, I respectfully dissent.

¹⁵ See ¶ 6 of the instant report. See also *Preserving the Open Internet; Broadband Industry Practices*, GN Docket No. 09-191, WC Docket No. 07-52, *Report and Order*, 25 FCC Rcd 17905 (2010).

**STATEMENT OF
COMMISSIONER MIGNON L. CLYBURN**

Re: *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 10-159, Seventh Broadband Progress Report and Order on Reconsideration

Section 706 of the Telecommunications Act of 1996 contemplates that broadband service should be available to *all* Americans in a reasonable and timely fashion. Today, we find that despite the efforts of both the private and public sectors to promote broadband availability for over a decade, as many as 26 million Americans do not have access to a broadband-capable network at home. We do so using a new data set available to us—the National Broadband Map—in addition to broadband subscribership data the Commission collects. While the Map is far from perfect, this is the first time the Commission has had available to it actual deployment information. I believe this is far better than relying *only* upon subscribership data and is a significant improvement from previous *Broadband Progress Reports*. Congress should be commended for recognizing the importance of such information to our nation and for its allocation of funding to ensure that the Map would be publicly available to the benefit of many, including consumers, industry, and policymakers.

It is evident that the Commission's efforts to promote broadband deployment to unserved areas continue to be a necessary and crucial endeavor. To date, we have addressed some barriers to deployment, as recommended by the National Broadband Plan, but there is much work to do. Our reform of the Universal Service Fund (USF) and the intercarrier compensation system (ICC) must be realized to ensure that those areas currently unserved do not remain that way. I was especially pleased that in February, we unanimously approved a Notice of Proposed Rulemaking, to reform and modernize the USF and ICC. In March, the Commission reiterated its commitment to that goal, stating "[w]e must eliminate waste and inefficiency and modernize USF and ICC to bring the benefits of broadband to all Americans. We can't afford to delay."¹ Indeed, every American without access to a broadband network, who wants to be connected, cannot afford *any* delay. As more services, products, and information migrate on-line, those Americans who cannot access them are at a significant disadvantage. This important fact was clearly illustrated by one consumer's personal testimony at our third workshop on USF/ICC reform in Omaha, Nebraska this week, who had moved from one suburb to another and had the unfortunate discovery that her new home was not served by high-speed Internet. She no longer could use all of the features and functions on the World Wide Web from home. This was not just a mere inconvenience for her and her family. It has completely altered her ability to conduct personal business in an efficient and effective manner. Accordingly, it is incumbent upon this Commission to address USF/ICC reform in a reasonable and timely fashion to ensure that consumers gain access to broadband no matter where they live, and I look forward to us completing our work within a few months after our record is complete in late May² so that we can provide for the availability of broadband throughout the nation.

I wholeheartedly agree with the *Report* that our assessment of broadband availability must include a review of our nation's adoption of broadband. Where a broadband-capable network is deployed, but cannot be accessed by some consumers due to, say, the cost of service or equipment—then it is not truly *available* to those consumers. The significant investments made by both the public and

¹ FCC Chairman Julius Genachowski and FCC Commissioners Michael Copps, Robert McDowell, Mignon Clyburn, and Meredith Baker, "Making Universal Service and Intercarrier Compensation Reform Happen," (March 15, 2011), available at <http://blog.broadband.gov/?entryId=1335554> (last visited May 19, 2011).

² See *id.*

private sectors to provide universal availability of broadband networks will be futile, if we do not address the barriers to broadband adoption. Too many Americans are being left behind—caught in a digital divide, and the statistics are sobering. Nearly 80 million American adults have not subscribed to broadband at home. Moreover, adoption of broadband is lower than the national average for minorities, low-income consumers, and residents of rural areas. In fact, cost is the most cited reason for those Americans who have not subscribed. I am concerned that these Americans cannot fully participate in our society and economy, and that they will have limited access to health care, educational, and employment opportunities that are essential for improving their lives and their children's futures. It is absolutely critical that the Commission address these issues in a reasonable and timely fashion.

I am hopeful that the efforts undertaken by industry, such as the Comcast Broadband Opportunity Program and CenturyLink's Broadband Adoption Program, will help address the cost and digital literacy barriers for some consumers. But we cannot rely solely on industry efforts. It is crucial for us to do our part and complete our review of the Lifeline program, provide the flexibility for consumers to use their subsidy to purchase bundled voice and broadband service, and implement a pilot project that offers discounted broadband service to low-income consumers.

I have not wavered from my commitment to do my part in addressing the issues before us as expeditiously as possible, so we can have an America where every citizen has access to and has capacity to adopt broadband.