

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

In the Matters of)
)
Inquiry Concerning the Deployment of Advanced) GN Docket No. 09-137
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)
)
A National Broadband Plan for Our Future) GN Docket No. 09-51

NOTICE OF INQUIRY

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

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I. INTRODUCTION

1. This *Notice of Inquiry (Inquiry)* begins a familiar task in a new way. As required by section 706 of the Telecommunications Act of 1996, as amended,¹ we seek comment on whether broadband² is being deployed to all Americans in a reasonable and timely fashion. Since Congress enacted section 706, the Commission has conducted five section 706 inquiries. These inquiries were conducted under a general national policy of encouraging the provision of broadband to the public.³ In each instance, the Commission concluded that broadband was being deployed to all Americans in a reasonable and timely fashion. These conclusions, however, rested on data increasingly criticized as lacking sufficient detail to support robust analyses.

2. Whatever concerns linger regarding the Commission’s prior section 706 analyses, we begin the present inquiry on a clean slate. In particular, we initiate this *Inquiry* against a backdrop of statutory and policy changes, as well as improvements to broadband data gathering. Recent Congressional legislation has underscored the importance of broadband to the nation and its position as a top priority at the Commission.⁴ As described in the *National Broadband Plan NOI* and the *Rural Broadband Report*, the nation is in the midst of a massive undertaking to ensure that all Americans have access to

¹ 47 U.S.C. § 1302(b). Section 706 of the Telecommunications Act of 1996, Pub. L. No. 104-104, title VII, Sec. 706, 110 Stat. 56, 153 (1996) (1996 Act), as amended in relevant part by the Broadband Data Improvement Act, Pub. L. No. 110-385, 122 Stat. 4096 (2008) (BDIA), is now codified in Title 47, Chapter 12 of the United States Code. *See* 47 U.S.C. § 1301 *et. seq.* Prior to the BDIA, section 706 was reproduced in the notes to section 157 of the Communications Act of 1934, as amended (the Act). 47 U.S.C. § 157 nt. (2008). In the text, we generally refer to section 706 and cite to the relevant current section of the BDIA and the United States Code, as applicable. Citations to outdated sections of the United States Code are denoted by date (*e.g.*, 47 U.S.C. § 157 nt. (2008)).

² As explained below, in this *Inquiry* we use the term “broadband” synonymously with “advanced telecommunications capability.” *See infra* para. 4.

³ 47 U.S.C. § 157 nt. (2008).

⁴ *See, e.g.*, American Recovery and Reinvestment Act of 2009, § 6001(k)(2), Pub. L. No. 111-5, 123 Stat. 115 (2009) (Recovery Act) (tasking the Commission with developing a national broadband plan to seek to ensure that all people of the United States have access to broadband); *see also* BDIA § 102(1); 47 U.S.C. § 1301(1) (finding that the expansion of broadband technology “has resulted in enhanced economic development and public safety for communities across the Nation, improved health care and educational opportunities, and a better quality of life for all Americans”); BDIA § 102(2); 47 U.S.C. § 1301(2) (recognizing that continued deployment and adoption of broadband technology is necessary “to ensuring that our Nation remains competitive and continues to create business and job growth”).

broadband.⁵ We will assess the nation's progress in deploying broadband in light of these recent Congressional directives. In addition, in contrast to prior section 706 inquiries, for this *Inquiry* we will have access to significantly more comprehensive broadband data, in part because the Commission in March 2009 began collecting far more granular broadband data on the revised FCC Form 477. We also will have the benefit of the extensive comments filed in response to the *National Broadband Plan NOI*.

II. BACKGROUND

3. Section 706 requires the Commission to “initiate a notice of inquiry concerning the availability of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms).”⁶ In conducting this inquiry, the Commission must “determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”⁷ If that “determination is negative, [the Commission] shall take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.”⁸

4. Section 706(c) defines advanced telecommunications capability as “high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”⁹ In previous reports to Congress, the Commission used the terms “broadband,” “advanced telecommunications capability,” and “advanced services” interchangeably to mean services and facilities with an upstream (customer-to-provider) and downstream (provider-to-customer) transmission speed of more than 200 kilobits per second (kbps).¹⁰ We will continue to use these terms interchangeably in this *Inquiry*.¹¹ We do not, however, foreclose the possibility that the Commission might later define “broadband” to be different from “advanced telecommunications capability” or “advanced services.” Indeed, we seek comment below on the

⁵ *A National Broadband Plan for Our Future*, GN Docket No. 09-51, Notice of Inquiry, 24 FCC Rcd 4342 (2009) (*National Broadband Plan NOI*); MICHAEL J. COPPS, ACTING CHMN., FCC, BRINGING BROADBAND TO RURAL AMERICA: REPORT ON A RURAL BROADBAND STRATEGY (May 22, 2009) (RURAL BROADBAND REPORT), attached to Acting Chairman Copps Releases Report on Rural Broadband Strategy, GN Docket No. 09-29, Public Notice, DA 09-1211 (rel. May 29, 2009).

⁶ 47 U.S.C. § 1302(b).

⁷ 47 U.S.C. § 1302(b).

⁸ 47 U.S.C. § 1302(b).

⁹ 47 U.S.C. § 1302(d)(1).

¹⁰ *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*, CC Docket No. 98-146, Report, 14 FCC Rcd 2398, 2406, para. 20 (1999) (*Section 706 First Report*); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146, Second Report, 15 FCC Rcd 20913, 20919-21, para. 10 (2000) (*Section 706 Second Report*); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146, Report, 17 FCC Rcd 2844, 2850, para. 9 (2002) (*Section 706 Third Report*); *Availability of Advanced Telecommunications Capability in the United States*, GN Docket No. 04-54, Fourth Report to Congress, 19 FCC Rcd 20540, 20551-52 (2004) (*Section 706 Fourth Report*); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 07-45, Fifth Report, 23 FCC Rcd 9615, 9616, para. 2 (2008) (*Section 706 Fifth Report*), *pet. for recon. pending*.

¹¹ We seek comment below on the proper definition of “broadband” for purposes of this proceeding and, in particular, whether the transmission speeds the Commission has used to define broadband remain appropriate. See *infra* Part IV.A.

meanings of these terms.¹² In contrast, the Commission has used the term “high-speed” to describe services with over 200 kbps capability in at least one (but not necessarily both) directions.¹³ In the *2008 Broadband Data Gathering Order*, the Commission updated the broadband reporting speed tiers and created the term “first generation data” to refer to those services with data rates greater than 200 kbps but less than 768 kbps in the faster direction, and the term “basic broadband tier 1” to refer to services equal to or greater than 768 kbps but less than 1.5 megabits per second (mbps) in the faster direction.¹⁴ Subsequent tiers were labeled “broadband tier 2” through “broadband tier 7.”¹⁵

5. The Commission conducted five inquiries pursuant to section 706 before that section was amended by the BDIA. In each report, the Commission concluded that the deployment of broadband, at the time of the report, was reasonable and timely on a general, nationwide basis.¹⁶ In 1999, the initial section 706 inquiry depicted the early stages of the deployment of advanced services and relied on anecdotal evidence relating to trends in investment in broadband facilities, deployment of facilities that serve the “last mile” to consumers, and demand for broadband.¹⁷ As such, although the Commission was encouraged that, for that point in time, “the deployment of [broadband] capability generally appear[ed] . . . reasonable and timely,” the Commission found it “difficult to reach any firm judgment about the state of deployment.”¹⁸

6. In 2000, shortly after initiating the second section 706 inquiry, the Commission expanded its information collection efforts to gain a more comprehensive understanding of broadband availability. Among other things, the Commission launched a formal data collection program to gather standardized subscribership information from providers of broadband services through the creation of Form 477.¹⁹ As

¹² See *infra* para. 35.

¹³ See *Section 706 Second Report*, 15 FCC Rcd at 20920, para. 11; *Section 706 Third Report*, 17 FCC Rcd at 2850-51, para. 9; *Section 706 Fourth Report*, 19 FCC Rcd at 20551.

¹⁴ *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol*, WC Docket No. 07-38, Report and Order and Further Notice of Proposed Rulemaking, 23 FCC Rcd 9691, 9700-01, para. 20 n.66 (2008) (*2008 Broadband Data Gathering Order*), Order on Reconsideration, 23 FCC Rcd 9800 (2008) (*2008 Broadband Data Gathering Reconsideration Order*).

¹⁵ The revised reporting tiers applicable for both uploads and downloads are: (1) greater than 200 kbps but less than 768 kbps; (2) equal to or greater than 768 kbps but less than 1.5 mbps; (3) equal to or greater than 1.5 mbps but less than 3.0 mbps; (4) equal to or greater than 3.0 mbps but less than 6.0 mbps, (5) equal to or greater than 6.0 mbps but less than 10.0 mbps; (6) equal to or greater than 10.0 mbps but less than 25.0 mbps; (7) equal to or greater than 25.0 mbps but less than 100.0 mbps; and (8) equal to or greater than 100 mbps. Additionally, providers must continue to report connections with download transfer rates in each of the categories above 200 kbps and upload speeds of 200 kbps or less. *2008 Broadband Data Gathering Order*, 23 FCC Rcd at 9700-02, paras. 20-22.

¹⁶ See *Section 706 First Report*, 14 FCC Rcd 2398; *Section 706 Second Report*, 15 FCC Rcd 20913; *Section 706 Third Report*, 17 FCC Rcd 2844; *Section 706 Fourth Report*, 19 FCC Rcd 20540; *Section 706 Fifth Report*, 23 FCC Rcd 9615.

¹⁷ *Section 706 First Report*, 14 FCC Rcd at 2414-45, paras. 34-90.

¹⁸ See *id.* at 2402, para. 6 (“[A]t such an early stage of deployment of many broadband services, it is difficult to reach any firm judgment about the state of deployment.”).

¹⁹ *Local Competition and Broadband Reporting*, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717 (2000). The Commission required “facilities-based providers of ‘full broadband’ and ‘one-way broadband’ services” to provide broadband data on the Form 477 so long as they provided service over at least 250 broadband service lines (or wireless channels) in a given state, or had at least 250 broadband subscribers in a given state. *Id.* at 7730-31, para. 22. The Commission used “full broadband” and “one-way broadband” synonymously with the (continued....)

initially adopted, Form 477 required covered providers to report the number of broadband connections they provide in each state as well as the 5-digit ZIP codes in which they had at least one customer.²⁰ The Commission also had convened the Federal-State Joint Conference on Advanced Telecommunications Services (Advanced Services Joint Conference), consisting of federal and state regulators, to provide a forum for an ongoing dialogue among the Commission, the states, and regional and local entities regarding the deployment of broadband.²¹ Finally, the Commission undertook a series of in-depth case studies to gain a better understanding of how broadband was being deployed and used in different communities.²² In assessing the data from these and other sources, the Commission determined in the *Section 706 Second Report* that broadband deployment, which was still in its early stages, was reasonable and timely overall.²³ The Commission also found, however, that not all Americans had access to broadband and that “the data support the troubling conclusion that market forces alone may not guarantee that some categories of Americans will receive timely access to advanced services.”²⁴ The Commission “identif[ied] certain categories of Americans who [were] particularly vulnerable to not having access to advanced services. These include[d] low-income consumers, those living in sparsely populated areas, minority consumers, Indians, persons with disabilities and those living in the U.S. territories.”²⁵

7. In 2002, the Commission’s third section 706 inquiry examined the advanced services marketplace using the same general framework and analysis as previous inquiries.²⁶ In reaching its conclusion that broadband was being reasonably and timely deployed, the Commission relied upon standardized information from providers of broadband derived from Form 477, as well as information gathered from commenters, analysts, and other sources.

8. In 2004, the Commission’s fourth section 706 inquiry included a discussion of developments in last-mile broadband technologies, as well as analysis of broadband deployment nationwide and in more specific categories, such as rural areas, schools, low-income populations, and minority groups.²⁷ At that time, the Commission reexamined its Form 477 local competition and broadband data gathering program,

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current meanings of “advanced telecommunications services” and “high-speed services.” *See id.* at 7731, para. 22 n.68.

²⁰ *Id.* at 7743-46, paras. 49-52. In 2004 the Commission increased the amount of data collected on Form 477 and eliminated the thresholds that had exempted smaller providers from reporting. *Local Telephone Competition and Broadband Reporting*, WC Docket No. 04-141, Report and Order, 19 FCC Rcd 22340 (2004) (*2004 Broadband Data Gathering Order*). As discussed in greater detail below, the Commission recently significantly improved the granularity of the broadband data it collects on Form 477. *See infra* Part III.B.1.a; *2008 Broadband Data Gathering Order*; *2008 Broadband Data Gathering Reconsideration Order*.

²¹ The Joint Conference was convened by the Commission on October 8, 1999, to further the vision of section 706 of the 1996 Act. *See Federal-State Joint Conference on Advanced Telecommunications Services*, CC Docket No. 99-294, Order, 14 FCC Rcd 17622 (1999). To that end, the Joint Conference held several field hearings to gather information on the deployment of advanced services, and issued a report regarding the availability and demand for broadband services in the United States. *See Broadband Services in the United States: An Analysis of Availability and Demand*, Federal-State Joint Conference on Advanced Services, October 2002.

²² *Section 706 Second Report*, 15 FCC Rcd at 20961-79, paras. 112-71.

²³ *Id.* at 20991-1003, paras. 203-43.

²⁴ *Id.* at 20992, para. 205.

²⁵ *Id.* at 20918, para. 8.

²⁶ *Section 706 Third Report*, 17 FCC Rcd at 2847-50, para. 7.

²⁷ *Section 706 Fourth Report*, 19 FCC Rcd at 20567-76.

and began requiring providers to submit further information about their broadband deployments on the basis of speed tiers for use in future section 706 inquiries.²⁸

9. Finally, in 2008, in its fifth section 706 inquiry, the Commission evaluated broadband deployment by relying on the Form 477 speed tiers adopted in 2004.²⁹ The report discussed industry's investment in broadband deployment, noted increased subscribership, and emphasized developments in last-mile broadband technologies, services, applications, and devices. Looking forward, the Commission anticipated an ever-greater demand for broadband services and applications.³⁰ The Commission also acknowledged that the Form 477 data collection was being revised to enable the Commission to assess broadband service subscribership and availability information on a more accurate and detailed level.³¹

10. Although the Commission's prior section 706 reports reveal minor differences in philosophy and reflect modest improvements in data collection efforts, all five prior inquiries were founded on a definition of broadband that has evolved little over time. In particular, most of the prior section 706 inquiries portray broadband only as a baseline of the minimum bandwidth speed required to qualify a service as an "advanced" service. Moreover, none of the inquiries was based on data capable of generating a comprehensive, highly-granular picture of broadband deployment in terms of geography, service capabilities, or other characteristics.³²

11. The framework and analysis the Commission employed in prior section 706 reports increasingly has been called into question. For example, a 2006 report by the United States Government Accountability Office (GAO) found that a key difficulty in evaluating broadband deployment was the lack of comprehensive broadband data.³³ In particular, the *GAO Report* questioned whether the Commission's Form 477 data—specifically, reporting broadband subscribership at the statewide level and identifying broadband as available in a particular ZIP code based on the presence of a single broadband subscriber anywhere in that ZIP code—provided a highly accurate depiction of local deployment of broadband infrastructures for residential service, especially in rural areas.³⁴ More recently, in the *Section 706 Fifth Report*, two Commissioners dissented from the conclusion that broadband was being deployed

²⁸ See *2004 Broadband Data Gathering Order*, 19 FCC Rcd at 22347, para. 14 (requiring filers to determine what percentage of their broadband or high-speed connections are faster than 200 kbps in both directions, and to categorize these connections into five "speed tiers"); see also *id.* ("As these faster services are introduced, it is vitally important that we understand the evolving dynamics of higher speed broadband availability in order to fulfill our statutory responsibilities to report about whether broadband is available to all Americans.").

²⁹ *Section 706 Fifth Report*, 23 FCC Rcd at 9617, para. 4.

³⁰ In addition, aside from its formal section 706 inquiries, the Commission has published semiannual statistical reports every year since 2000, summarizing the Form 477 data relating to high-speed connections (*i.e.*, transmission connections to and from the Internet in excess of 200 kbps in at least one direction). The Commission has collected and published information 16 times under this program. The most recently published report, attached as Appendix, presents data as of June 30, 2008. See *INDUST. ANALYSIS & TECH. DIV., FCC, HIGH-SPEED SERVICES FOR INTERNET ACCESS: STATUS AS OF JUNE 30, 2008*, at tbls. 1, 15 (rel. July 23, 2009) (July 2009 High Speed Report).

³¹ *Section 706 Fifth Report*, 23 FCC Rcd at 9618, 9633, paras. 6, 35 (stating that the Commission "anticipate[d] being able to provide more disaggregated broadband deployment data in future [section 706] reports").

³² See *RURAL BROADBAND REPORT* at para. 95 (recognizing that "past Section 706 Reports included an incomplete analysis of the broadband market and relied on data that lacked sufficient granularity"). As explained below, the Commission recently has taken significant steps to improve its broadband data collection.

³³ See generally GAO, *BROADBAND DEPLOYMENT IS EXTENSIVE THROUGHOUT THE UNITED STATES, BUT IT IS DIFFICULT TO ASSESS THE EXTENT OF DEPLOYMENT GAPS IN RURAL AREAS*, GAO-06-426, at 14 (May 2006) (GAO REPORT).

³⁴ *Id.* at 14-18.

in a reasonable and timely fashion to all Americans.³⁵ In addition, several public interest groups sought reconsideration of the *Section 706 Fifth Report*.³⁶

III. EVOLVING NATIONAL GOALS AND THE NEED FOR BROADBAND DATA

12. Since the Commission's last section 706 report, Congress and the Commission have emphasized the national goals of achieving ubiquitous deployment of, and increased use of, broadband.³⁷ And they have recognized the crucial role that gathering and evaluating comprehensive broadband deployment data will play in enabling us to meet those goals.³⁸ Indeed, Congress specifically has found that "[i]mproving Federal data on the deployment and adoption of broadband service will assist in the development of broadband technology across all regions of the Nation."³⁹ While Congress, the Commission, and other federal agencies all have taken steps to improve broadband data collection efforts, as described further below, it will take some time for the full range of new data to become available.⁴⁰ Nevertheless, the current section 706 inquiry will benefit from—indeed, be driven by—improved broadband data.⁴¹ Comprehensive broadband data will thus serve as the foundation of our assessment of whether broadband is being deployed to all Americans in a reasonable and timely fashion.

A. Broadband Statutory Developments

1. Recovery Act – Development of the National Broadband Plan

13. In February 2009, Congress enacted the Recovery Act (*i.e.*, the “stimulus package”).⁴² The Recovery Act reflects a significant evolution in our nation's broadband goals since Congress enacted section 706 in 1996.⁴³ Specifically, the Recovery Act directs the Commission, by February 17, 2010, to develop a plan that seeks to ensure that all people of the United States have access to broadband (National Broadband Plan).⁴⁴ The Commission must also establish benchmarks for meeting the national goal of

³⁵ *Section 706 Fifth Report*, 23 FCC Rcd at 9685-86 (dissenting statement of Comm'r Michael J. Copps); *id.* at 9687-88 (dissenting statement of Comm'r Jonathan Adelstein).

³⁶ Petition for Reconsideration, Consumers Union, Consumer Federation of America, and Free Press, GN Docket No. 07-45 (filed July 11, 2008) (Consumers Union Fifth Section 706 Report Reconsideration Petition) (asking the Commission to recognize the highly asymmetric nature of most commercially available broadband technologies, to address concerns that many Americans have access to just two broadband services (cable modem and digital subscriber line (DSL)), and to address America's poor standing in international broadband rankings); *see also Pleading Cycle Established for Comments on Petition for Reconsideration of the Commission's Fifth 706 Report*, GN Docket No. 07-45, Public Notice, 23 FCC Rcd 14589 (2008) (seeking comment on Consumers Union Section 706 Fifth Report Reconsideration Petition).

³⁷ *See infra* paras. 13-17.

³⁸ *See infra* paras. 18-32.

³⁹ BDIA § 102(3); 47 U.S.C. § 1301(3).

⁴⁰ *See infra* Part III.B.

⁴¹ Future section 706 inquiries will reap even greater benefits from the many investments in broadband data collection being made today.

⁴² *See supra* note 4.

⁴³ Section 706 directs the Commission to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.” 47 U.S.C. § 1302(a). Although the ultimate goal of section 706 is consistent with current national broadband goals, the Recovery Act has reshaped national priorities by bringing increased intensity to the national goal of ubiquitous broadband deployment.

⁴⁴ The National Broadband Plan will include an analysis of the most effective and efficient mechanisms for ensuring broadband access, a detailed strategy for achieving affordability of broadband service and maximum utilization of (continued....)

ubiquitous broadband deployment, and must conduct its analysis of broadband deployment within certain parameters established by Congress.⁴⁵ To help the Commission conduct its analysis and develop its plan, Congress gave the Commission access to certain broadband and other data collected by the federal government.⁴⁶ In addition, the Recovery Act provides up to \$7.2 billion in broadband stimulus funds to accelerate the deployment of broadband infrastructure and services throughout the nation.⁴⁷ On April 8, 2009, the Commission released a notice of inquiry seeking comment from all stakeholders, affected parties, and interested persons on all aspects of creating the National Broadband Plan.⁴⁸ At the Commission's July 2, 2009 Open Agenda Meeting, the Commission announced a number of measures to increase the level of civic engagement regarding the National Broadband Plan.⁴⁹ Our efforts to develop the National Broadband Plan are well underway.

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broadband infrastructure and service by the public, an evaluation of the status of deployment of broadband service, including progress of projects supported by the grants made pursuant to the Broadband Technology Opportunities Program, and a plan for use of broadband infrastructure and services in advancing a broad array of public interest goals. Recovery Act § 6001(k)(1), (2).

⁴⁵ Recovery Act § 6001(k)(2).

⁴⁶ Recovery Act § 6001(k)(3). The Recovery Act provides that “[i]n developing the plan, the Commission shall have access to data provided to other Government agencies under the [BDIA].” *Id.* Consequently, the Commission will have access to data provided to the: (1) Department of Commerce's National Telecommunications and Information Administration (NTIA) for its state broadband mapping efforts; (2) GAO's Comptroller General for its study on broadband metrics and standards; (3) Small Business Administration's (SBA) Office of Advocacy for its study evaluating the impact of broadband speed and price on small businesses; and (4) Department of Commerce's Bureau of the Census (Census Bureau) for its expansion of the American Community Survey by eliciting information from residential households, including those located on native lands, on whether they own or use a computer, subscribe to Internet service, and, whether they use dial-up or broadband Internet service. *See* BDIA §§ 103(d), 104, 105, 106(g); *see also infra* Parts III.B.2 & III.B.3.b. On July 1, 2009, the Department of Agriculture's (USDA) Rural Utilities Service (RUS) and NTIA released a joint Notice of Funds Availability (NOFA) on the Recovery Act's broadband grant and loan programs, and, on July 2, 2009, NTIA released a NOFA on funding for state broadband mapping. Both NOFAs specify that the Commission will have access to data used in NTIA's Broadband Technology Opportunities Program (BTOP) and in NTIA's state broadband mapping efforts. *See* Department of Agriculture, Rural Utilities Service, Broadband Initiatives Program, RIN: 0572-ZA01, Department of Commerce, National Telecommunications and Information Administration, Broadband Technology Opportunities Program, RIN: 0660-ZA28, Notice of Funds Availability, 74 Fed. Reg. 33104, 33123 (July 9, 2009) (NTIA/RUS BTOP/BIP NOFA) (“All BTOP Broadband Infrastructure awardees that offer Internet access service to the public for a fee must agree to participate in the State Broadband Data and Development Grant Program pursuant to the BDIA and section 6001(l) of the Recovery Act.”); Department of Commerce, National Telecommunications and Information Administration, State Broadband Data and Development Grant Program, Docket No. 0660-ZA29, Notice of Funds Availability, 74 Fed. Reg. 32545, 32555 (July 8, 2009) (NTIA State Mapping NOFA) (“[A]ll awardees agree to cooperate with NTIA and the FCC's national broadband mapping efforts. In particular, awardees agree that . . . they will coordinate with and lend reasonable assistance to NTIA and the FCC . . . in such parties' efforts to assist the recipients in their data collection or to collect broadband mapping related data directly in the States.”).

⁴⁷ *National Broadband Plan NOI*, 24 FCC Rcd at 4345, para. 9 (summarizing key provisions of the Recovery Act).

⁴⁸ *National Broadband Plan NOI*. By June 8, 2009, the Commission had received over 500 comments and by July 21, 2009, the Commission had received over 150 replies, to the *National Broadband Plan NOI*. On June 25, 2009, the Wireline Competition Bureau extended the reply comment deadline by two weeks. *See A National Broadband Plan for Our Future*, Order, GN Docket No. 09-51, DA 09-1420 (WCB rel. June 25, 2009) (extending reply comment deadline from July 7, 2009 to July 21, 2009).

⁴⁹ For example, the Commission intends to host at least 22 public staff workshops in August and early September 2009, and beyond that will conduct a number of additional workshops and hearings. The Commission has launched a beta version of the broadband web site (<http://www.broadband.gov>) and has already announced plans for (continued....)

14. We thus initiate this section 706 inquiry in the midst of our inquiry on the National Broadband Plan.⁵⁰ It is neither possible nor desirable to consider these proceedings separate from each other. The questions we ask in this *Inquiry* are those necessary for the Commission's sixth section 706 report, which will assess, based on available data, whether broadband is being deployed in a reasonable and timely fashion to all Americans. The *National Broadband Plan NOI* sought comment on a number of issues relevant to this section 706 inquiry, including the interplay between the requirements of the Recovery Act and section 706.⁵¹ We will incorporate into the record of this section 706 proceeding the comments and other materials received in response to the *National Broadband Plan NOI*, and invite parties to cross-reference such comments as appropriate.⁵² Among the materials included in the record in this proceeding will be the records of the staff workshops that will be held from approximately August 6, 2009, to September 9, 2009, on a variety of broadband related topics.⁵³

2. BDIA Revisions to the Section 706 Inquiry

15. On October 10, 2008, Congress enacted the BDIA, which substantially revises section 706 to improve the quality and quantity of data the Commission collects on the deployment and adoption of broadband services.⁵⁴ These revisions were based on a finding that improving "data on the deployment and adoption of broadband service will assist in the development of broadband technology across all regions of the Nation."⁵⁵ First, the BDIA requires the Commission to publish its section 706 reports

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expansion and improvement of that web site. In addition, the Commission will be receiving a number of interim reports at forthcoming Open Meetings on topics related to the National Broadband Plan and has announced other interim targets and deadlines. See Federal Communications Commission, The FCC and Broadband: The Next 230 Days, at 9-15 (2009), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-291879A1.pdf; <http://www.broadband.gov>. The Commission also has announced that the Berkman Center for Internet and Society at Harvard University will help inform the Commission's efforts in developing the National Broadband Plan by "conduct[ing] an independent expert review of existing literature and studies about broadband deployment and usage throughout the world." See *Harvard's Berkman Center to Conduct Independent Review of Broadband Studies to Assist FCC*, News Release (rel. July 14, 2009) (stating that the results of the Berkman Center review will be made publicly available), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-291986A1.pdf.

⁵⁰ See *National Broadband Plan NOI*.

⁵¹ *National Broadband Plan NOI*, 24 FCC Rcd at 4377, para. 108.

⁵² Consequently, if a party has adequately addressed the issues relevant to this section 706 inquiry in comments submitted in response to the *National Broadband Plan NOI*, that party can be assured that the Commission will give full consideration to its previously filed comments in this section 706 inquiry. To ensure that the record created in this section 706 proceeding is made part of the record in the National Broadband Plan proceeding, we have cross-docketed the two proceedings (see caption, *supra*) and we direct commenters to file their submissions in this *Inquiry* in both dockets. Filing instructions are set forth below. See *infra* para. 70.

⁵³ See <http://www.broadband.gov/workshops.html#schedule>; see also *supra* note 49.

⁵⁴ BDIA § 101; 47 U.S.C. § 1301. The BDIA also directs a number of other federal agencies to take specific actions related to broadband, including imposing certain broadband data collection requirements on the Census Bureau and the SBA. In particular, the Census Bureau, in consultation with the Commission, is required to expand the Census Bureau's American Community Survey, which is an annual national survey that collects and produces population and housing information. BDIA § 103(d); 47 U.S.C. § 1303(d). The BDIA expands the American Community Survey by eliciting information from residential households, including those located on native lands, on whether they own or use a computer, subscribe to an Internet access service, and, if so, whether they use dial-up or broadband to connect to the Internet. *Id.* The BDIA also directs the SBA to conduct a survey evaluating the impact of broadband speed and price on small businesses by October 10, 2010. BDIA § 105.

⁵⁵ BDIA § 102(3); 47 U.S.C. § 1301(3).

“annually” instead of “regularly,” as previously required.⁵⁶ As a result, the Commission will be conducting section 706 inquiries more often than in the past.

16. Second, the BDIA requires the Commission to compile “demographic information for unserved areas” as part of the annual section 706 inquiry.⁵⁷ Specifically, the BDIA requires that the Commission “compile a list of geographical areas not served by any provider of advanced telecommunications capability.”⁵⁸ To the extent that Census Bureau data are available, the Commission must then “determine, for each such unserved area—(1) the population; (2) the population density; and (3) the average per capita income.”⁵⁹

17. Third, the BDIA requires the Commission to include an international comparison in its annual section 706 report.⁶⁰ Specifically, the BDIA requires the Commission to engage in a detailed international comparison of the “extent of broadband service capability (including data transmission speeds and price for broadband service capability) in a total of 75 communities in at least 25 countries abroad for each of the data rate benchmarks for broadband service utilized by the Commission to reflect different speed tiers.”⁶¹ For this comparison, the BDIA directs the Commission to choose international communities comparable to U.S. communities with respect to population size, population density, topography, and demographic profile, and include “a geographically diverse selection of countries; and communities including the capital cities of such countries.”⁶² As part of the international comparison, the Commission must identify a number of specific similarities and differences in each community, including “their market structures, the number of competitors, the number of facilities-based providers, the types of technologies deployed by such providers, the applications and services those technologies enable, the regulatory model under which broadband service capability is provided, the types of applications and services used, business and residential use of such services, and other media available to consumers.”⁶³ On March 31, 2009, the Commission released a Public Notice seeking comment on how it should implement the BDIA’s international comparison requirement.⁶⁴ In addition, the Commission’s International Bureau sent a number of letters to regulatory agencies and ministries in other countries asking for their cooperation in this task.⁶⁵ International Bureau staff also are continuing to gather broadband and other related information from various sources.⁶⁶

⁵⁶ BDIA § 103(a)(1); 47 U.S.C. § 1302(b). Prior to the enactment of the BDIA, section 706 directed the Commission to conduct a regular inquiry, rather than an annual inquiry, as to whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion. *Compare* 47 U.S.C. § 157 nt. (2008) *with* 47 U.S.C. § 1302(b).

⁵⁷ BDIA § 103(a)(3); 47 U.S.C. § 1302(c).

⁵⁸ BDIA § 103(a)(3); 47 U.S.C. § 1302(c).

⁵⁹ BDIA § 103(a)(3); 47 U.S.C. § 1302(c).

⁶⁰ BDIA § 103(b); 47 U.S.C. § 1303(b).

⁶¹ BDIA § 103(b); 47 U.S.C. § 1303(b).

⁶² BDIA § 103(b)(2); 47 U.S.C. § 1303(b)(2).

⁶³ BDIA § 103(b)(3); 47 U.S.C. § 1303(b)(3).

⁶⁴ *Comment Sought on International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act*, GN Docket No. 09-47, Public Notice, 24 FCC Rcd 3908 (2009) (*BDIA Public Notice*). Comments were received by April 10, 2009, and replies were received by April 17, 2009.

⁶⁵ *See, e.g.*, Letter from John Giusti, Acting Bureau Chief, International Bureau, FCC, to Mr. Jen-Kwey Hong, Director, Department of Planning, National Communications Commission, Taiwan, GN Docket No. 09-47 (rel. May 13, 2009); Letter from John Giusti, Acting Bureau Chief, International Bureau, FCC, to Dr. Ahmed Hiasat, (continued....)

B. Comprehensive Broadband Data Collection

18. Since the last section 706 report, the Commission and Congress each have taken steps to improve the quality of broadband data that are gathered. As described above, Congress also has delineated additional analysis that must be included in section 706 reports that will rely, in part, on these new data. As described below, these data gathering improvements will greatly enhance the quality of the broadband data that inform the Commission's section 706 inquiries, as well as the resulting reports.

1. Commission Broadband Data Collection

a. Form 477 Data Collection

19. In June 2008, the Commission issued an order revising the Form 477 data collection,⁶⁷ and began collecting data using this revised form in March 2009. The revisions to Form 477 increased the precision and quality of the broadband subscribership data the Commission collects from broadband services providers.⁶⁸

20. First, the revised Form 477 collects information regarding an expanded number of broadband reporting speed tiers compared to prior iterations of Form 477. The new speed tiers capture more precise information about the upload and download speeds that are available to customers.⁶⁹ Second, the revised Form 477 requires wired, fixed wireless, and satellite broadband service providers to report numbers of broadband subscribers by Census Tract,⁷⁰ broken down by speed tier and technology type.⁷¹ Formerly, these broadband providers were only required to list those ZIP codes where they provided service to at

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Chairman and CEO, Telecommunications Regulatory Commission, Jordan, GN Docket No. 09-47 (rel. May 14, 2009); Letter from John Giusti, Acting Bureau Chief, International Bureau, FCC, to Lorena Pineiro Ugarte, Head of International Affairs Department, Undersecretariat of Telecommunications, Chile, GN Docket No. 09-47 (rel. May 14, 2009).

⁶⁶ See, e.g., Letter from David M. Don, Senior Director, Public Policy, Comcast Corporation, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 09-47 (filed June 9, 2009); Letter from Dr. Herbert Kubicek, Institut für Informationsmanagement Bremen GmbH, Bremen, Germany, GN Docket No. 09-47 (filed June 16, 2009).

⁶⁷ 2008 Broadband Data Gathering Order, 23 FCC Rcd 9691.

⁶⁸ See FCC Form 477, Instructions for September 1, 2009 Filing, at 2 (explaining the types of entities that must provide broadband data on their Form 477 submissions), <http://www.fcc.gov/Forms/Form477/477inst.pdf> (FCC Form 477 Instructions).

⁶⁹ Form 477 instructions direct all Form 477 broadband filers to place broadband connections into speed categories based on the authorized maximum information transfer rate of the end user's broadband connection. See *supra* note 15 (setting forth the revised speed tiers).

⁷⁰ The Census Bureau defines a Census Tract as a "small, relatively permanent statistical subdivision of a county delineated by a local committee of census data users for the purpose of presenting data. Census Tract boundaries normally follow visible features, but may follow governmental unit boundaries and other non-visible features in some instances; they always nest within counties. Designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment, Census Tracts average about 4,000 inhabitants. They may be split by any sub-county geographic entity." U.S. Census Bureau, http://factfinder.census.gov/home/en/epss/glossary_c.html (last visited July 29, 2009). The Commission selected census-based units over ZIP codes for several reasons, including their stability, and their ability to be correlated with demographic data (e.g., race, income, education, and Tribal land status) that provide policymakers with additional tools to analyze broadband uptake. 2008 Broadband Data Gathering Order, 23 FCC Rcd at 9696-97, para. 12.

⁷¹ Technology types include: (1) Asymmetric xDSL; (2) Symmetric xDSL; (3) Other Wireline (copper-wire based); (4) Cable Modem; (5) Optical Carrier (fiber to the home or business end user); (6) Satellite; (7) Terrestrial Fixed Wireless; (8) Terrestrial Mobile Wireless; (9) Electric Power Line; and (10) All Other. FCC Form 477 Instructions at 7-8.

least one subscriber and to provide broadband connection totals by state.⁷² Third, the revisions to Form 477 improve the accuracy of information the Commission gathers about mobile wireless broadband deployment, including by specifying which subscriptions must be reported as broadband subscriptions,⁷³ by modifying how residential connections should be counted,⁷⁴ and by requiring reporting by Census Tract of the provider's coverage area(s).⁷⁵ Mobile wireless broadband service providers must report, by state and by speed tier, the number of broadband service subscriptions and the percentage of the subscriptions that are residential.⁷⁶ Formerly, mobile wireless providers were required to report the number of their mobile wireless broadband service subscribers in each state, as well as the ZIP codes that best represented the filers' mobile wireless broadband coverage areas.⁷⁷ Fourth, in June 2008, the Commission released a *sua sponte* reconsideration order that requires wired, fixed wireless, and satellite Form 477 filers to report the percentage of connections that are residential connections, in each broadband speed tier in each Census Tract.⁷⁸

21. Broadband providers must file Form 477 twice each year. The Commission staff are in the process of analyzing the first round of Form 477 filings under these new rules, which were due March 16, 2009. The next Form 477 data filings are due on September 1, 2009. We expect that analysis of the first set of revised Form 477 data will be included in the *Section 706 Sixth Report*.

b. Mobile Broadband Network Coverage Maps and Data

22. In addition to our Form 477 data collection, the Commission tracks the deployment of mobile wireless broadband networks using network coverage data acquired through a contract with an independent consulting firm.⁷⁹ With this information, the Commission is able to estimate, at the Census Block level, the percentage of the U.S. population and geographic area covered by various mobile broadband network technologies. A Census Block is the smallest geographic entity for which the Census

⁷² See, e.g., *2008 Broadband Data Gathering Order*, 23 FCC Rcd at 9693, para. 6.

⁷³ In the revised Form 477, plans that provide access to the lawful Internet content of the subscriber's choice are distinguished from plans that allow access only to limited online offerings, such as downloading ringtones and games, and text and multimedia messaging. The Commission clarified that terrestrial mobile wireless providers must report the number of subscribers with broadband-capable devices. The Commission also directed terrestrial mobile wireless providers to report, separately, the number of monthly (or longer term) subscriptions that include a data plan to reach the lawful Internet content of the subscriber's choice. *Id.* at 9703-04, para. 23.

⁷⁴ The Commission directed mobile wireless broadband providers to report as residential subscriptions "those subscriptions that are not billed to a corporate account, to a non-corporate business customer account, or to a government or institutional account." *Id.* at 9704, para. 24.

⁷⁵ *Id.* at 9698, para. 16 (stating that at the Census Tract level of detail, the mobile wireless broadband providers must report the tracts that "best represent their broadband service footprint for each of the speed tiers in which they offer service").

⁷⁶ *Id.*

⁷⁷ *2004 Broadband Data Gathering Order*, 19 FCC Rcd at 22350, para. 18.

⁷⁸ *2008 Broadband Data Gathering Reconsideration Order*, 23 FCC Rcd at 9802, para. 7.

⁷⁹ The consulting firm is American Roamer, which tracks service provision for mobile voice and mobile data services. The *Thirteenth CMRS Competition Report* describes how the Commission analyzes mobile network coverage. See *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services*, WT Docket No. 08-27, Thirteenth Report, DA 09-54, paras. 37-39, 144-47 (WTB rel. Jan. 16, 2009) (*Thirteenth CMRS Competition Report*).

Bureau tabulates census data, and there are more than eight million Census Blocks in the United States.⁸⁰ The results of the Commission's analysis of mobile network deployment are included in its *Annual CMRS Competition Reports*.⁸¹

c. Cable System Broadband Data

23. The Commission also annually collects data on cable system architecture from a sample of cable systems using FCC Form 325.⁸² In particular, providers report on a system-wide basis information such as the overall size of the coaxial and fiber cable plant, the average number of subscribers served from the nodes, the total bandwidth of the cable system, whether the provider offers cable modem service, and, if so, the number of cable modem subscribers and the number of leased cable modems.⁸³ In addition, the Act requires the Commission to assess annually the status of competition in the market for the delivery of video programming.⁸⁴ Most recently, on January 16, 2009, the Commission requested data on the status of competition in the market for the delivery of video programming for 2007; similar data for years 2008 and 2009 were requested on April 9, 2009.⁸⁵ These notices seek information on, among other things, the broadband service offerings of multichannel video programming distributors (MVPDs), all of which is provided on a voluntary basis. The Commission also collects information on cable broadband services as part of its annual survey of cable industry prices.⁸⁶ The survey collects information at the cable system level and includes questions regarding the number of video, Internet, and telephony customers served over cable facilities, system capacity, speed of Internet service, and package prices of video, Internet, and telephony services.⁸⁷

d. Consumer Broadband Registry

24. As explained in the *2008 Broadband Data Gathering Order*, the Commission determined to create a voluntary consumer broadband registry that households may use to report availability and speed of broadband Internet access service at their premises.⁸⁸ This voluntary registry will enable households to use the telephone, mail, e-mail, or the Internet to report the apparent unavailability of broadband service

⁸⁰ See *Thirteenth CMRS Competition Report*, para. 37.

⁸¹ See *id.* at paras. 37-39, 144-47.

⁸² See *1998 Biennial Regulatory Review—Annual Report of Cable Television Systems, Form 325, filed Pursuant to Section 76.403 of the Commission's Rules*, CS Docket No. 98-61, Report and Order, 14 FCC Rcd 4720 (1999); see *id.* at 4726, para. 12 (explaining that the Commission requires all cable systems with over 20,000 subscribers to submit Form 325 and uses sampling techniques to obtain information regarding cable systems with fewer subscribers).

⁸³ See *id.*

⁸⁴ See 47 U.S.C. § 548(g).

⁸⁵ See *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, MB Docket No. 07-269, Notice of Inquiry, 24 FCC Rcd 750 (2009); Supplemental Notice of Inquiry, 24 FCC Rcd 4401 (2009).

⁸⁶ *Implementation of Section 3 of the Cable Television Consumer Protection and Competition Act of 1992, Statistical Report on Average Rates for Basic Service, Cable Programming Service, and Equipment*, MM Docket No. 92-266, Report on Cable Industry Prices, 24 FCC Rcd 259 (2009). The survey reports on a random sample of cable systems serving approximately 750 communities nationwide, which is selected to be representative of the distribution of cable subscribers nationwide in terms of small and large cable systems and competition.

⁸⁷ See, e.g., FCC Media Bureau, *COALS Electronic Filing System User Manual*, Version 1.0, Chap. 7 (Sept. 12, 2003), <http://fjallfoss.fcc.gov/esb/coals/docs/coalsweb.pdf>.

⁸⁸ *2008 Broadband Data Gathering Order*, 23 FCC Rcd at 9699, para. 18.

for their locations, as well as information about existing broadband service, such as the type and actual speed of Internet access service they use. This consumer broadband registry currently is under development by the Commission.

2. Broadband Mapping Efforts

25. The Recovery Act directs the NTIA of the Department of Commerce to create “a comprehensive nationwide inventory map of existing broadband service capability and availability” that shows the geographic extent to which that capability is deployed and available for each state.⁸⁹ By February 2011, NTIA must make this inventory map accessible to the public on an NTIA website in a form that is both interactive and searchable.⁹⁰ NTIA is further required to establish a grant program for state-level broadband availability mapping and other broadband related projects.⁹¹ On July 2, 2009, NTIA released the NTIA State Mapping NOFA setting forth the parameters to “fund projects that gather comprehensive and accurate State-level broadband mapping data, develop State-level broadband maps, [and] aid in the development and maintenance of a national broadband map, and fund statewide initiatives for broadband planning.”⁹² Awardees under this program will be required to “submit all of their collected data to NTIA for use by NTIA and the [Commission] in developing and maintaining the national broadband map, which will be displayed on an NTIA Web page before February 17, 2011.”⁹³

26. Although the NTIA’s broadband map may not be available in time for the *Section 706 Sixth Report*, a number of other organizations have begun to map broadband availability and related information, some of which have data available now.⁹⁴ The entities vary, although most of them are public-private partnerships,⁹⁵ or task forces established by a governor and similarly comprised of community, government, and broadband industry representatives.⁹⁶ For instance, the USDA hosts an

⁸⁹ Recovery Act § 6001(l); *see also* BDIA §§ 106(e)(10), (g); 47 U.S.C. § 1304(e)(10), (g); *National Broadband Plan NOI*, 24 FCC Rcd at 4364-65, para. 61.

⁹⁰ Recovery Act § 6001(l).

⁹¹ BDIA § 106; 47 U.S.C. § 1304; Recovery Act § 6001(l).

⁹² NTIA State Mapping NOFA, 74 Fed. Reg. at 32547; *see also id.* (explaining that the State Broadband Data Program “is a competitive, merit-based matching grant program that implements the joint purposes of the Recovery Act and the BDIA through the award of grants”).

⁹³ *Id.* at 32546. We note that section 106(h) of the BDIA requires the Commission to provide eligible entities involved in state broadband mapping efforts access to aggregate Form 477 data. *See* BDIA § 106(h); 47 U.S.C. § 1304(h). On July 17, 2009, the Wireline Competition Bureau released a Public Notice seeking comment on how the Commission should implement this particular section of the BDIA. *Comment Sought on Providing Eligible Entities Access to Aggregate Form 477 Data as Required by the Broadband Data Improvement Act*, WC Docket No. 07-38; GN Docket Nos. 09-47, 09-51, Public Notice, DA 09-1550 (WCB rel. July 17, 2009); *see also Dates Established for Comment on Providing Eligible Entities Access to Aggregate Form 477 Data as Required by the Broadband Data Improvement Act*, WC Docket No. 07-38; GN Docket Nos. 09-47, 09-51, Public Notice, DA 09-1598 (WCB rel. July 24, 2009) (stating that comments were due July 30, 2009, and reply comments were due August 4, 2009).

⁹⁴ *See* RURAL BROADBAND REPORT at para. 103; INSTITUTE FOR REGULATORY POLICY STUDIES, ILLINOIS STATE UNIVERSITY, BROADBAND ACCESS IN ILLINOIS (2007), <http://www.irps.ilstu.edu/broadband/IRPS%20Broadband%20Report%20080907.pdf>; E-NC, BROADBAND ACCESS IN NORTH CAROLINA, <http://e-ncbroadband.org/> (last visited July 29, 2009).

⁹⁵ *See* RURAL BROADBAND REPORT at para. 103.

⁹⁶ *See, e.g.*, CALIFORNIA BROADBAND TASK FORCE, THE STATE OF CONNECTIVITY, BUILDING INNOVATION THROUGH BROADBAND, FINAL REPORT (2008), www.calink.ca.gov/pdf/CBTF_FINAL_Report.pdf; (continued....)

interactive map of USDA and United States Department of Housing and Urban Development projects funded by the Recovery Act.⁹⁷ In addition, a number of state public utility commissions also map broadband availability,⁹⁸ as do certain state-sponsored initiatives.⁹⁹ Apart from mapping, these organizations generally seek to promote broadband deployment throughout their states, particularly in rural areas. These organizations typically rely on voluntary submissions of data on residential broadband availability, and the entities collecting the data often sign non-disclosure agreements and make other commitments (such as agreeing to depict only aggregated data) in response to providers' requests for confidentiality.¹⁰⁰ Many of these mapping efforts have resulted in useful maps of network broadband availability, although we are aware of no state that requires all broadband providers to submit broadband availability data. It also is possible that some state-sponsored and private mapping efforts may not encompass all areas or all providers within a particular state.¹⁰¹ We note also that certain commenters in the Commission's broadband availability mapping proceeding question the independence and effectiveness of many of the non-governmental broadband mapping organizations.¹⁰²

3. Other Broadband Data Gathering Efforts

27. Congress recently enacted additional broadband data gathering requirements and ordered special studies. We limit our review here to those requirements and initiatives that are likely to inform our section 706 inquiry more directly.¹⁰³

a. Commission Consumer Survey

28. The BDIA requires the Commission to conduct a periodic consumer survey for the purpose of evaluating, on a statistically significant basis, the national characteristics of the use of broadband service capability.¹⁰⁴ The results of the consumer survey must be made public at least once per year.¹⁰⁵ The survey must include urban, suburban, and rural areas in the large business, small business, and residential consumer markets. It must, at a minimum, ask questions to determine the types of technology used for the services consumers choose, amounts paid, actual speeds, and the most frequently used applications

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COMMONWEALTH BROADBAND ROUNDTABLE, FINAL REPORT (2008),
http://www.otpba.vi.virginia.gov/pdf/Governor_report.pdf.

⁹⁷ See United States Department of Agriculture, *USDA and HUD ARRA Projects Map*, <http://www.usda.gov/recovery/map/> (last visited July 29, 2009).

⁹⁸ See, e.g., VT DEP'T OF PUB. SERV., APPROXIMATE BROADBAND AVAILABILITY IN VERMONT—2006 (2007), http://publicservice.vermont.gov/cable/broadband_availability_map.html.pdf (providing a map of broadband availability) (last visited July 29, 2009).

⁹⁹ See, e.g., e-NC Authority, *Who We Are*, <http://www.e-nc.org/WhoWeAre.asp> (last visited July 29, 2009).

¹⁰⁰ RURAL BROADBAND REPORT at para. 103.

¹⁰¹ See *id.* at para. 104 (“recogniz[ing] the importance of including all rural areas, particularly Tribal lands, in federal mapping efforts”).

¹⁰² *Id.* at para. 103.

¹⁰³ The Commission also seeks data on the satellite industry for its *Annual Satellite Competition Reports*, which examine, among other things, the reach of satellite-based, two-way broadband to the home. E.g., *Annual Report and Analysis of Competitive Market Conditions with Respect to Domestic and International Satellite Communications Services*, IB Docket No. 07-252, Second Report, 23 FCC Rcd 15170 (2008). This is an annual report to Congress about competitive market conditions with respect to domestic and international satellite communications services, and is not primarily designed as a broadband data gathering tool.

¹⁰⁴ BDIA § 103(c)(1); 47 U.S.C. § 1303(c)(1).

¹⁰⁵ BDIA § 103(c)(2); 47 U.S.C. § 1303(c)(2).

and services. It also must ask consumers why they do not subscribe to broadband service and what non-subscription broadband they use.¹⁰⁶ As noted above, on March 31, 2009, the Commission released a Public Notice seeking comment on how it should implement the consumer survey requirements in the BDIA and will implement this provision of the BDIA in the near future.¹⁰⁷ To the extent available, the results of this consumer survey also will inform our section 706 report.

b. GAO Broadband Metrics and Standards Study

29. The BDIA requires the GAO's Comptroller General to conduct a study on broadband metrics and standards and submit a report to Congress on the results of its study by October 10, 2009.¹⁰⁸ The study will evaluate the "broadband metrics that may be used by industry and the Federal Government [including the Commission] to provide users with more accurate information about the cost and capability of their broadband connection[s], and to better compare the deployment and penetration of broadband in the United States with other countries."¹⁰⁹

30. As part of that effort, the GAO is required to consider potential standards or metrics that may be used:

- (1) to calculate the average price per megabit per second of broadband offerings;
- (2) to reflect the average actual speed of broadband offerings compared to advertised potential speeds and to consider factors affecting speed that may be outside the control of a broadband provider;
- (3) to compare, using comparable metrics and standards, the availability and quality of broadband offerings in the United States with the availability and quality of broadband offerings in other industrialized nations, including countries that are members of the Organization for Economic Cooperation and Development; and

¹⁰⁶ BDIA § 103(c)(1); 47 U.S.C. § 1303(c)(1). Specifically, section 103(c)(1) of the BDIA states: "For the purpose of evaluating, on a statistically significant basis, the national characteristics of the use of broadband service capability, the Commission shall conduct and make public periodic surveys of consumers in urban, suburban, and rural areas in the large business, small business, and residential consumer markets to determine—(A) the types of technology used to provide the broadband service capability to which consumers subscribe; (B) the amounts consumers pay per month for such capability; (C) the actual data transmission speeds of such capability; (D) the types of applications and services consumers most frequently use in conjunction with such capability; (E) for consumers who have declined to subscribe to broadband service capability, the reasons given by such consumers for declining such capability; (F) other sources of broadband service capability which consumers regularly use or on which they rely; and (G) any other information the Commission deems appropriate for such purpose." BDIA § 103(c)(1); 47 U.S.C. § 1303(c)(1).

¹⁰⁷ *BDIA Public Notice*; see also *supra* note 64.

¹⁰⁸ BDIA § 104(b). Specifically, the BDIA states that, "[n]ot later than 1 year after the date of enactment of this Act, the Comptroller General shall submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Energy and Commerce on the results of the study." *Id.*

¹⁰⁹ BDIA § 104(a).

(4) to distinguish between complementary and substitutable broadband offerings in evaluating deployment and penetration.¹¹⁰

31. The GAO also is required to provide specific “recommendations for how industry and the Federal Communications Commission can use such metrics and comparisons to improve the quality of broadband data and to better evaluate the deployment and penetration of comparable broadband service at comparable rates across all regions of the Nation.”¹¹¹ We anticipate taking into account in the present *Inquiry* any data included by the GAO in its report.

4. Other Broadband Legislation and Ongoing Commission Efforts

32. Congress and the Commission have taken a number of additional actions related to broadband that may be relevant to this *Inquiry*. Because we summarized these actions in the recent *National Broadband NOI*, there is no need to repeat that discussion here.¹¹²

IV. SPECIFIC ISSUES FOR INQUIRY

33. The fundamental issue we address is whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion. To guide our inquiry, we break this fundamental issue down into its component parts and seek comment on each of them specifically. In the following paragraphs we ask:

- (1) How should we define “advanced telecommunications capability” or “broadband?”
- (2) Is broadband available to all Americans?
- (3) Is the current level of broadband deployment reasonable and timely?
- (4) What actions, if any, should the Commission take to accelerate broadband deployment?
- (5) What actions should the Commission take to improve its regular broadband data collection efforts?

In seeking comment, we solicit information according to the framework of section 706, as amended by the BDIA. This inquiry also will be guided by the recent Congressional and Commission actions described above. We also invite the Advanced Services Joint Conference to submit any information that it deems appropriate into this docket. We ask all parties to provide data to support their assertions whenever possible.

A. What Is Advanced Telecommunications Capability or Broadband?

34. Section 706(c)(1) defines advanced telecommunications capability “without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, graphics, and video telecommunications using any technology.”¹¹³ Previous section 706 reports relied on static definitions of advanced telecommunications capability, which were tied to a specific transmission speed cut off.¹¹⁴ The

¹¹⁰ BDIA § 104(a).

¹¹¹ BDIA § 104(b).

¹¹² See *National Broadband Plan NOI*, 24 FCC Rcd at 4384, Appendix; see also *supra* para. 13.

¹¹³ 47 U.S.C. § 1302(d)(1).

¹¹⁴ See, e.g., *Section 706 Fourth Report*, 19 FCC Rcd at 20551-52; *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible* (continued....)

Commission has used the terms “advanced telecommunications capability,” “advanced services,” and “broadband” to describe services and facilities with both an upstream (customer-to-provider) and a downstream (provider-to-customer) transmission speed of more than 200 kbps.¹¹⁵ The Commission has also used the term “high-speed” to describe services and facilities with more than 200 kbps capability in at least one direction.¹¹⁶ In the *Section 706 Fifth Report*, the Commission for the first time evaluated advanced telecommunications capability by speed tiers, including a “basic broadband tier 1” of services equal to or greater than 768 kbps but less than 1.5 mbps in the faster direction.¹¹⁷ In light of the broadband goals and data collection efforts discussed above, we seek comment on how to define “advanced telecommunications capability” and “broadband” for purposes of our sixth section 706 report.

35. Depending on the context, Congress and the Commission have used a variety of terms to refer to similar capabilities, including “advanced telecommunications capability,”¹¹⁸ “broadband,”¹¹⁹ and “high-speed” services.¹²⁰ We seek comment on whether such terms should have a unified definition in the section 706 report. We also seek comment on whether these terms should have the same meanings ascribed to them in other Commission proceedings (at least on a going-forward basis). In particular, we seek comment on whether the Commission should use the same definitions in both the section 706 inquiry and the National Broadband Plan proceedings. In the *National Broadband Plan NOI*, we sought comment about how to define “broadband” in the context of developing the National Broadband Plan.¹²¹ For example, we asked whether the definition of broadband should be tied to “a numerical definition or an experiential metric;”¹²² whether it should include a “dependability metric;”¹²³ and whether the definition should account for differences in technology, service to residential and business customers, or service to urban, suburban, and rural areas.¹²⁴ Further, some of the key definitional questions regarding “advanced telecommunications capability,” which we discuss in more detail below, may echo similar questions asked in the *National Broadband Plan NOI*. As explained above, we will incorporate responses to the *National Broadband Plan NOI* into our record here and will consider comments on how to define

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Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, GN Docket No. 07-45, Notice of Inquiry, 22 FCC Rcd 7816, 7819, para. 12 (2007) (*Section 706 Fifth NOI*).

¹¹⁵ See, e.g., *Section 706 Fourth Report*, 19 FCC Rcd at 20551; see also *supra* para. 4.

¹¹⁶ See *supra* para. 4.

¹¹⁷ See *Section 706 Fifth Report*, 23 FCC Rcd at 9617, para. 4 (finding it appropriate “to evaluate broadband deployment by monitoring the migration of customers and services to higher speed tiers”); see also *2008 Broadband Data Gathering Order*, 23 FCC Rcd at 9701, para. 20 n.66 (using the term “basic broadband tier 1” to refer to services equal to or greater than 768 kbps but less than 1.5 mbps in the faster direction).

¹¹⁸ 47 U.S.C. § 1302(d)(1).

¹¹⁹ See *2008 Broadband Data Gathering Order*, 23 FCC Rcd at 9701, para. 20 n.66.

¹²⁰ See, e.g., *Section 706 Fifth Report*, 23 FCC Rcd at 9616, para. 2 (discussing the use of these terms generally); *2008 Broadband Data Gathering Order*, 23 FCC Rcd at 9701, para. 20 n.66 (using the term “basic broadband”); 47 U.S.C. § 1301 (referring to “broadband” in the BDIA findings); 47 U.S.C. § 1302(d) (defining “advanced telecommunications capability” for purposes of the section 706 inquiry); Recovery Act § 6001(k)(2) (referring to “broadband capability”).

¹²¹ See *National Broadband Plan NOI*, 24 FCC Rcd at 4346-48, paras. 15-22.

¹²² *Id.* at 4347, para. 17 (characterizing experiential metrics as “based on the consumer’s ability to access sufficiently robust data for certain identifiable broadband services”).

¹²³ *Id.* at 4348, para. 19.

¹²⁴ *Id.* at 4347-48, para. 19.

“advanced telecommunications capability” or “broadband” in that proceeding in response to this *Inquiry* as well.¹²⁵

36. We also seek comment on the definitions of broadband used by other government agencies and whether we should adopt such definitions for the purposes of our section 706 inquiry. For example, the USDA’s RUS regulations for the Community Connect Grant Program provide that “Broadband Transmission Service means providing an information-rate equivalent to at least 200 kilobits/second in the consumer’s connection to the network, both from the provider to the consumer (downstream) and from the consumer to the provider (upstream).”¹²⁶ The joint NTIA and RUS NOFA for broadband grants, released on July 1, 2009, defines broadband as “providing two-way data transmission with advertised speeds of at least 768 kilobits per second (kbps) downstream and at least 200 kbps upstream to end users, or providing sufficient capacity in a middle mile project to support the provision of broadband service to end users.”¹²⁷ The NTIA NOFA on state broadband mapping efforts, released on July 2, 2009, contains essentially the same definition of broadband.¹²⁸ We also seek comment on whether we should consider definitions of broadband used by other countries and how such definitions might inform our definitions. How should these definitions and concepts inform our definition of “advanced telecommunications capability” or “broadband” in the section 706 context?

37. To the extent broadband should be defined by “speed,” should we consider raising the minimum speed we have used to define broadband in past section 706 inquiries? We seek comment on whether our definition should be static or dynamic (from report to report), with speed tiers that account for changes over time in technology, available applications, or consumer usage and demand. In particular, should broadband be defined by reference to the new Form 477 speed tiers? If so, which of the new speed tiers should be considered to be broadband? As the data available to the Commission become more detailed, to what extent should the Commission aggregate or disaggregate those data in its section 706 reports? Section 706(c)(1) defines advanced telecommunications capability as capability that enables users to both “originate” and “receive” certain advanced services. As mentioned above, certain public interest groups have argued that most commercially available broadband technologies offer insufficient upstream capability to enable consumers to originate high-quality video content.¹²⁹ Should the definition focus on downstream capabilities, upstream capabilities, or both? Should the upstream and downstream capabilities be symmetrical? To the extent broadband is defined by speed tiers, how should it account for upstream and downstream speeds?

38. Section 706(c)(1) specifies that advanced telecommunications capability is defined “without regard to any transmission media or technology,” and includes the provision of certain advanced services “using any technology.” We seek comment on whether, consistent with the statute, we may define “broadband” to account for different types of transmission technologies. If so, should our definition account for the fact that a range of technologies may be used to provide services in a variety of situations?¹³⁰ For example, should a different set of standards be used to identify mobile broadband

¹²⁵ As previously noted, a party that has filed comments in response to the *National Broadband Plan NOI* can be assured that the Commission will give full consideration to its previously filed comments in this section 706 inquiry. *See supra* para. 14.

¹²⁶ 7 C.F.R. § 1739.3.

¹²⁷ NTIA/RUS BTOP/BIP NOFA, 74 Fed. Reg. at 33108.

¹²⁸ NTIA State Mapping NOFA, 74 Fed. Reg. at 32548; *see id.* Technical App. at 32557, 32560, 32562.

¹²⁹ *See* Consumers Union Section 706 Fifth Report Reconsideration Petition at 2.

¹³⁰ Broadband deployments include wireless broadband services offered using the Advanced Wireless Service, 700 megahertz (MHz), Broadband Radio Service (BRS), Personal Communication Services (PCS), Cellular, 3650-3700 MHz, or unlicensed (including TV White Spaces) spectrum bands. Wireless broadband services typically rely on (continued....)

services—which allow mobility or portability but may have lower throughputs—and fixed broadband services? How should the definition account for satellite technology, which has wide-spread geographic availability but comparatively limited bandwidth and relatively high latency? To what extent does the widespread adoption of new Internet-based applications, over time, influence the definition of what “advanced” means to consumers?

39. Broadband capability is not necessarily limited to broadband Internet access services offered to end users.¹³¹ Does broadband include the special access services from one or more incumbent LECs, wireless services providers, or other carriers that Internet service providers (ISPs) purchase to transmit end-user traffic to Internet backbone service providers? The term “middle mile” has been used to describe the facilities necessary to connect broadband providers to Internet access points. For example, the *Rural Broadband Report* described broadband middle mile facilities as broadband “facilities that are commonly used to connect the ‘last mile’ ISP with an Internet backbone service provider.”¹³² How should we define the term middle mile? Alternatively, to what extent should middle mile and special access facilities and services be included in the definition of broadband? What differences, if any, are there between middle mile and special access facilities and services? We seek comment on how parties use, or would like to use, middle mile and special access facilities and services to deliver broadband. What types of technologies are typically used for middle mile connections? How do the capabilities of and needs for middle mile and special access services vary among rural, urban, and suburban environments? How do the availability of middle mile and special access facilities and services affect the delivery of broadband services to end users? Are there areas of the country where middle mile and special access facilities are not available or are prohibitively expensive? We ask parties to submit data to support their assertions. What other middle mile and special access issues are relevant to the section 706 inquiry?

40. We seek comment on whether there are patterns of consumer adoption and usage of services utilizing broadband. How and why do consumers, both individuals and businesses, adopt and use services utilizing broadband? Do broadband adoption rates vary by type of consumer, and, if so, why? For example, we seek comment on whether adoption rates vary for minority consumers, persons with disabilities, individuals living on Tribal lands, low-income consumers, or consumers of different age

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Worldwide Interoperability for Microwave Access (WiMAX), Long Term Evolution (LTE), High Speed Packet Access (HSPA), CDMA Evolution-Data Optimized (EV-DO), or Wi-Fi technologies. Broadband deployments further include those offered using fiber, DSL, cable (*e.g.*, Data-Over-Cable Service Interface Specification (DOCSIS) 3.0), or Broadband over Power Line (BPL) technologies.

¹³¹ See, *e.g.*, *Section 706 Third Report*, 17 FCC Rcd at 2853-54, paras. 14-16; see also *id.* at 2853, para. 14 (explaining that “[a]dvanced services are provided using a variety of public and private networks that rely on different network architectures and transmission paths”).

¹³² RURAL BROADBAND REPORT at para. 114; see also *Section 706 Third Report*, 17 FCC Rcd at 2853-54, paras. 15-16 (distinguishing between “long haul communications transport facilities, middle mile, last mile, and last 100 feet” and stating that “middle mile facilities provide relatively fast, large-capacity connections between long haul facilities and last mile” and that “[m]iddle mile facilities can range from a few miles to a few hundred miles. They are often constructed of fiber optic lines, but microwave and satellite links can be used as well.”); NTIA State Mapping NOFA, Technical App. 74 Fed. Reg. at 32562 (defining “middle-mile and backbone interconnection points” collectively as providing “connectivity between . . . a service provider’s network elements (or segments) or . . . between a service provider’s network and another provider’s network, including the Internet backbone” and noting that “[m]iddle mile and backbone interconnection points typically enable relatively fast data rates, are built to handle substantial capacities, and may be service-quality assured”); NTIA/RUS BTOP/BIP NOFA, 74 Fed. Reg. at 33109 (defining a middle mile project as “a broadband infrastructure project that does not predominantly provide broadband service to end users or to end-user devices, and may include interoffice transport, backhaul, Internet connectivity, or special access”).

groups.¹³³ We also seek comment on how education level affects adoption rates. In addition, the widespread adoption of new Internet-based applications, over time, may influence the definition of what “advanced” means. We invite parties to provide references to scholarly studies and hard data that describe consumers’ use and adoption of broadband and demonstrate what applications consumers are adopting and using. For example, the PEW/Internet & American Life Project regularly conducts surveys and publishes research on Americans’ broadband connections and use of the Internet.¹³⁴ We seek comment on how such research efforts should inform the definition of broadband and, more generally, our section 706 inquiry.

41. With technology developing at a rapid pace, it is important that our definition of broadband remain relevant and not be rendered obsolete by shifts in technological platforms or other new technological advances. We thus seek comment on how our definition can best be designed to remain sufficiently flexible to account for the continuously evolving technological environment. In addressing this issue, commenters should discuss the extent to which any changes to the definition of broadband would affect the Commission’s ability to perform year-over-year analyses of the relevant data.

B. Is Broadband Available to All Americans?

1. Definition of Availability

42. Section 706(b) requires the Commission to conduct an “inquiry concerning the *availability* of advanced telecommunications capability to all Americans.”¹³⁵ In the *Section 706 First Report*, the Commission stated that availability “refers to a consumer’s ability to purchase a capability that has been deployed.”¹³⁶ Does this description form the basis of an adequate definition of availability? More generally, we seek comment on what it means for broadband to be “availab[le].”

43. In the past, our section 706 inquiries have used subscribership data collected through Form 477 as an indicator of availability.¹³⁷ The most current published Form 477 data indicate that, as of June

¹³³ See *infra* paras. 56-61; see also Recovery Act § 6001(b)(3)(B) (referring to the “aged” as “vulnerable populations”); SUSANNAH FOX & SYDNEY JONES, PEW RESEARCH CENTER PUBLICATIONS, PEW INTERNET AND AMERICAN LIFE PROJECT, GENERATIONS ONLINE IN 2009 (2009), <http://pewresearch.org/pubs/1093/generations-online> (reporting broadband-in-the-home and Internet use patterns by age cohort); JOHN B. HARRIGAN, PEW RESEARCH CENTER PUBLICATIONS, PEW INTERNET AND AMERICAN LIFE PROJECT, HOME BROADBAND ADOPTION 2009 (2009), <http://pewresearch.org/pubs/1254/home-broadband-adoption-2009.aspx> (2009 PEW BROADBAND ADOPTION STUDY) (reporting that broadband usage among adults ages 65 or older grew from 19% in May 2008 to 30% in April 2009).

¹³⁴ See, e.g., 2009 PEW BROADBAND ADOPTION STUDY; see also IDA Singapore, *Infocomm Usage – Households & Individuals*, <http://www.ida.gov.sg/Publications/20070822125451.aspx> (last visited July 29, 2009) (statistical charts on, among other things, individual usage of select Internet services); CENSUS AND STATISTICS DEPARTMENT, GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION, THEMATIC HOUSEHOLD SURVEY REPORT NO. 37: INFORMATION TECHNOLOGY USAGE AND PENETRATION (2008), http://www.censtatd.gov.hk/products_and_services/products/publications/statistical_report/social_data/index_cd_B1130237_dt_latest.jsp (includes data on PC and Internet penetration, usage of Internet service, and usage of electronic business services); CANADIAN RADIO-TELEVISION AND TELECOMMUNICATIONS COMMISSION, DECIMA STUDY ON ACCESS TO NEWS SOURCES (2007), <http://www.crtc.gc.ca/eng/publications/reports/decima2007.htm> (describing the results of a commissioned study on media usage).

¹³⁵ 47 U.S.C. § 1302(b) (emphasis added).

¹³⁶ *Section 706 First Report*, 14 FCC Rcd at 2410, para. 30.

¹³⁷ See *supra* Part II; *Section 706 Fifth NOI*, 22 FCC Rcd at 7821, para. 14 (relying on the “association between subscription and deployment,” the Commission reasoned that “such data collection provides a means to assess the pace at which advanced telecommunications capabilities are being made available in different parts of the country and across different demographic groups”); *Section 706 First Report*, 14 FCC Rcd at 2402, para. 7 (relying on (continued....))

2008, the number of high speed lines nationwide reached 132.8 million and that 95 percent of ZIP codes had four or more providers with high speed lines in service.¹³⁸ As described above, the Commission's revised Form 477 data collection requires providers to submit more detailed data on subscribership.¹³⁹ In conducting this inquiry, the Commission will, at a minimum, evaluate the new subscribership data available from our revised Form 477 data collection. We expect those data will enable us to identify the presence of a provider, or multiple providers, at the more granular Census Tract level (and, therefore, also at the county level¹⁴⁰) as well as enabling other types of analysis such as market penetration analysis. Also, incumbent local exchange carriers and cable TV systems will continue to report, on Form 477, the percentage of residential premises in their service areas where they offer DSL or cable modem high-speed Internet access service, respectively.¹⁴¹ We note that the mobile wireless broadband network coverage maps and the underlying data on which they are based, described above, allow the Commission to determine the availability of mobile broadband services at the Census Block level. We seek comment on the possible ways of analyzing the Form 477 data and the mobile wireless broadband maps and data (*e.g.*, the American Roamer mobile services data). We also seek comment on ways to analyze other sources of data available to the Commission to the extent they reflect broadband availability.

44. We also seek comment on the extent to which the developing broadband mapping efforts can and should influence this inquiry (or future inquiries) concerning broadband availability. In the NTIA State Mapping NOFA, NTIA states that, for its state mapping grant purposes, it will consider broadband service "'available' to an end user at an address if a broadband service provider does, or could, within a typical service interval (7 to 10 business days) without an extraordinary commitment of resources, provision two-way data transmission to and from the Internet with advertised speeds of at least 768 kilobits per second (kbps) downstream and at least 200 kbps upstream to the end user at the address."¹⁴² We seek comment on how NTIA's definition of "available" should inform our section 706 inquiry into broadband availability. More generally, we seek comment on the extent to which infrastructure data collected for broadband mapping efforts can serve as a measure of broadband availability for section 706 purposes. Should "availability" for section 706 purposes be derived (in whole or in part) based on the data underlying broadband maps that would identify where broadband infrastructure is deployed across the country?¹⁴³ What broadband mapping infrastructure data for particular states has been compiled that the Commission could rely on to inform the present inquiry? We ask parties to identify other data the Commission has or that we could obtain from other sources to inform our *Inquiry*.

45. Section 706 specifically directs the Commission to conduct an inquiry "concerning the *availability* of advanced telecommunications capability to all Americans."¹⁴⁴ Subscribership data,

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subscribership data as a proxy for deployment and availability, and noting that such data "may not be a precise estimate of actual deployment and availability").

¹³⁸ July 2009 High Speed Report at Tables 1, 15.

¹³⁹ See *supra* Part III.B.1.a.

¹⁴⁰ Census Tracts never cross county boundaries. See *supra* note 70. Therefore, county level data are available wherever comprehensive Census Tract data are available.

¹⁴¹ In June 2008, DSL service was estimated to be offered to 83% of residential premises in the local telephone company service areas on average, and to 96% of the residential premises passed by cable TV plant on average. July 2009 High Speed Report at Table 14.

¹⁴² NTIA State Mapping NOFA 74 Fed. Reg. at 32548; see *id.*, Technical App. at 32557.

¹⁴³ The Recovery Act gave the Commission access, for use in developing a national broadband plan, to all data provided to other federal agencies under the BDIA. See *supra* note 46; Recovery Act § 6001(k)(3).

¹⁴⁴ 47 U.S.C. § 1302(b) (emphasis added).

although an indicator of broadband availability, is a measure of the adoption of broadband services. We seek comment on whether, and to what extent, continued reliance on subscribership data to determine availability is appropriate. For example, would continued reliance on subscribership data allow greater continuity with our prior section 706 reports, provide a useful counterpart to infrastructure data, or highlight gaps between availability and demand that should be investigated? Would continued reliance on subscribership data in our section 706 reports serve other national goals, such as seeking to expand broadband usage?¹⁴⁵ Once the Commission obtains detailed information on where broadband infrastructure is deployed, such as from mapping data, should the Commission rely solely on such infrastructure data or should it continue to rely, at least in part, on Form 477 subscribership data in its section 706 inquiries?

46. We also seek comment on whether the Commission's annual section 706 inquiry should be expanded. For example, the nation's broadband policy goals now seek to encourage increased utilization of broadband in addition to the ubiquitous deployment of broadband facilities.¹⁴⁶ Would it be useful and appropriate for the Commission to assess the level of demand for broadband services in its section 706 inquiry? If so, what should the scope of any such inquiry be and upon what data should the Commission rely? Even if such assessment would be appropriate and useful, would it make more sense for the Commission to defer such inquiry until benchmarks for the National Broadband Plan have been established?¹⁴⁷

47. We seek comment on whether and how the existence of community anchor institutions and publicly available Internet access points (*e.g.*, Wi-Fi hotspots, public libraries, and Internet cafes), should affect our consideration of availability. For instance, we seek comment on what entities the Commission should consider to be community anchor institutions. NTIA has defined "community anchor institutions" as "[s]chools, libraries, medical and healthcare providers, public safety entities, community colleges and other institutions of higher education, and other community support organizations and entities."¹⁴⁸ Is this definition of community anchor institutions appropriate for the Commission to use for purposes of the section 706 report? We seek comment on the extent and role of community anchor institutions and publicly available Internet access points across the nation, and the extent to which they are available in urban, rural, and suburban areas, as well as in Tribal areas.¹⁴⁹ Further, we seek comment on how the existence of these institutions and access points affects consumer adoption and usage of broadband services.

¹⁴⁵ See *infra* note 147.

¹⁴⁶ See Recovery Act § 6001(k)(2)(B), (D) (declaring that the National Broadband Plan shall include "a detailed strategy for achieving affordability of such service and maximum utilization of broadband infrastructure and service by the public" and "a plan for use of broadband infrastructure and services in advancing consumer welfare, civic participation, public safety" and a number of other national purposes); see also Recovery Act § 6001(b)(5) (declaring that one of the purposes of the Broadband Technology Opportunities Program is to "stimulate the demand for broadband").

¹⁴⁷ The Recovery Act directs the Commission to "establish benchmarks for meeting th[e] goal" that all people of the United States have access to broadband capability. Recovery Act § 6001(k)(2).

¹⁴⁸ NTIA State Mapping NOFA, 74 Fed. Reg. at 32548, Technical App. at 32563; see also NTIA/RUS BTOP/BIP NOFA, 74 Fed. Reg. at 33108 ("Community anchor institutions means schools, libraries, medical and healthcare providers, public safety entities, community colleges and other institutions of higher education, and other community support organizations and agencies that provide outreach, access, equipment and support services to facilitate greater use of broadband service by vulnerable populations, including low-income, unemployed, and the aged.").

¹⁴⁹ See, *e.g.*, *National Broadband Plan NOI*, 24 FCC Rcd at 4349, para. 23.

48. We welcome additional data from other sources that will enable us to make informed judgments about broadband availability. We request objective, empirical data from companies, think tanks, governments, analysts, consumer groups, and others. In addition to data related to the specific locations where broadband may be accessed, we seek comment on other issues related to availability. For example, how, if at all, should the price of broadband relate to the availability of these services for all Americans? What sources of data are available on the price and quality of broadband and how should the Commission evaluate such data to determine whether these services are affordable and available to all Americans?¹⁵⁰ We also seek comment on what other factors consumers consider in their decision to subscribe to broadband. What is the significance of equipment or software costs consumers must incur to subscribe to broadband? Do certain applications drive the adoption of broadband and, if so, which ones? Do concerns about computer security (*e.g.*, identity theft, computer viruses/worms) affect consumers' decisions to adopt and use broadband?¹⁵¹ What surveys or data are available relating to the actual speed of broadband used by customers as compared to the speed advertised or otherwise claimed by providers and how should the Commission evaluate such data?¹⁵² We also seek comment on whether the marketplace is working and whether there are any specific, verifiable examples of anticompetitive conduct in the broadband market that are occurring today.

49. Finally, while we invite parties to submit their own data on broadband availability in this docket, we recognize that such submissions raise concerns about the confidentiality of proprietary data. We seek comment on how the Commission should balance legitimate confidentiality interests in the information it collects against the goals of accountability and openness, including enabling the public to measure and review progress.¹⁵³

2. Trends in Developing Technologies

50. In prior reports, the Commission looked closely at the various existing and newly emerging technologies capable of providing broadband. Most recently, the *Section 706 Fifth Report* described in detail several technologies used to provide advanced services: (1) cable modem service; (2) DSL (especially asymmetric DSL, or ADSL); (3) fiber-based wireline technologies, specifically fiber-to-the-home (FTTH) and fiber-to-the-curb (FTTC); (4) licensed wireless technologies; (5) unlicensed wireless technologies; (6) BPL; and (7) satellite service.¹⁵⁴ We seek comment on technological developments that have occurred since the *Section 706 Fifth Report*. What new network or other technologies, such as WiMAX and LTE, are currently being deployed? How widely have such new technologies been deployed, and what percentages of customers utilize such services? To what extent has the development of innovative applications or end-user devices influenced broadband adoption generally? Further, what

¹⁵⁰ See, *e.g.*, 2009 PEW BROADBAND ADOPTION STUDY (reporting that, from 2008 to 2009, the average price subscribers to premium broadband service were charged rose from \$38.10 to \$44.60 per month, and that, for basic broadband, the average price rose from \$32.80 to \$37.10 per month over this same time period).

¹⁵¹ See Office of the Press Secretary, White House, *Remarks by the President on Securing Our Nation's Cyber Infrastructure* (rel. May 29, 2009).

¹⁵² SEE IDATE CONSULTING & RESEARCH, BROADBAND COVERAGE IN EUROPE, FINAL REPORT: 2008 SURVEY (2008), http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/broadband_coverage_2008.pdf (presenting results of survey on broadband coverage and take-up across Europe (EU-27 Member States + Norway and Iceland)); PATRIK SANDGREN, SWEDISH POST AND TELECOM AGENCY (PTS), REPORT NO. PTS-ER-2009:8, BROADBAND SURVEY 2008 – A GEOGRAPHICAL OVERVIEW OF BROADBAND INFRASTRUCTURE IN SWEDEN (2009), <http://www.pts.se/upload/Rapporter/Internet/2009/broadband-survey-2008-pts-er-2009-8.pdf> (government commissioned report analyzing access to broadband in Sweden).

¹⁵³ See *National Broadband Plan NOI*, 24 FCC Rcd at 4351, para. 32.

¹⁵⁴ See *Section 706 Fifth Report*, 23 FCC Rcd at 9619-29, paras. 8-24.

broadband technologies have not yet been deployed, but are expected to be deployed in the near future? Finally, we seek comment on whether certain technological developments are likely to be particularly beneficial to specific groups of consumers, such as rural or Tribal consumers, or customers with disabilities?

51. We also seek comment on what innovative technologies are not yet deployed, but the deployment of which are expected in the near future. The Commission's Form 477 data collection program captures the marketplace presence of broadband services that utilize new and innovative technologies once consumer use of the services occurs. Our data collection does not, however, directly monitor the development of new technologies with likely, or possible, application to advanced services. Nor does our data collection program directly monitor the development of innovative applications that utilize broadband. We therefore invite parties to bring to our attention technologies on the horizon that might be used by current or potential providers to deliver new technologies or broadband services to consumers. In addition, we are interested in technologies that might be used directly by consumers, *e.g.*, within the consumer's premises, to lower the cost or difficulty of installing or using advanced services. We also are interested in technologies that might enable new broadband applications to become of interest to consumers.

C. Is Broadband Deployment Reasonable and Timely?

52. Section 706 requires the Commission to determine "whether advanced telecommunications capability is being deployed to all Americans *in a reasonable and timely fashion.*"¹⁵⁵ We seek comment on how the developments discussed in Part III above should inform our inquiry into the reasonableness and timeliness of broadband deployment to all Americans. Once again, we will incorporate comments filed in the *National Broadband Plan NOI* into our record here, and also invite parties to file comments that are relevant to the questions set forth below.¹⁵⁶

53. We seek comment generally on whether broadband is being deployed to all Americans in a reasonable and timely fashion, and ask commenters to describe the empirical basis for their conclusions. Additionally, we seek comment on how to evaluate whether deployment is "reasonable and timely." What level of broadband deployment is "reasonable"? How should we assess the timeliness of broadband deployment? How granular should our examination of these issues be? In particular, we ask how the evolution in broadband goals since our *Section 706 Fifth Report* affects our determination of whether deployment of broadband is "reasonable and timely."

54. As discussed above, pursuant to section 103(a)(3) of the BDIA, the Commission must compile "a list of geographical areas that are not served by any provider of advanced telecommunications capability," and "to the extent that data from the Census Bureau [are] available, determine for each unserved area: (1) the population; (2) population density; and (3) average per capita income."¹⁵⁷ We seek comment on how the Commission should implement this new broadband data collection requirement. In particular, we seek comment on how to define "geographic area" in the context of deployment of broadband, and its relationship to Census Bureau data. Should we define the "geographical area" in terms of Census Tracts, which the Commission uses for Form 477, or other Census-defined terms, or would another geographic area enable the Commission to identify unserved

¹⁵⁵ 47 U.S.C. § 1302(b) (emphasis added).

¹⁵⁶ See *e.g.*, *National Broadband Plan NOI*, 24 FCC Rcd at 4346-50, 4361-62, 4364-65, paras. 15-28, 54-57, 61-62 (requesting comment on how to define broadband, broadband affordability and utilization, and subscribership data and mapping); see *supra* para. 14.

¹⁵⁷ BDIA § 103(a)(3); 47 U.S.C. § 1302(c); see also *National Broadband Plan NOI*, 24 FCC Rcd at 4364-65, para. 61.

areas in a more useful and comprehensive way?¹⁵⁸ Further, how should the Commission identify and address relatively small geographic areas that are unserved when neighboring or surrounding areas are served? We also seek comment on whether use of the terminology “areas that are not served by any provider”¹⁵⁹ in this proceeding is the same as or different from the term “unserved” as defined by NTIA and RUS in their implementations of the Recovery Act.¹⁶⁰ In particular, NTIA and RUS adopt the smaller Census Blocks as the relevant geographic area, rather than Census Tracts. We seek comment on whether the Commission should similarly rely on Census Block data for our section 706 analysis to the extent such data are available. Further, we seek comment on whether we should consider all technologies in examining whether an area is not served by any provider of broadband. For example, NTIA and RUS will exclude satellite broadband service when determining whether an area is unserved for purposes of their broadband grant programs.¹⁶¹ Should we adopt a similar rationale here and exclude satellite broadband providers when identifying areas not served by any provider of broadband?¹⁶² Finally, we seek comment on how the list of geographic areas not served by any provider should inform our analysis of whether broadband service is being deployed to all Americans in a reasonable and timely fashion. We ask parties to provide us data and analyses regarding the reasons why these areas are not served.

55. As required by section 706(a), we seek comment on the deployment of broadband to elementary and secondary schools and classrooms,¹⁶³ an area in which the federal universal service fund, specifically, the schools and libraries support mechanism (also known as the E-rate program), provides substantial support.¹⁶⁴ Specifically, we seek comment regarding broadband availability to students that attend elementary and secondary schools. Are there particular groups of students that lack sufficient access to broadband? As the Commission noted in the *Section 706 Fifth NOI*, a 2006 study released by the National Center for Education Statistics found that nearly 100 percent of public schools in the United States had Internet access, and 97 percent of these schools used broadband connections to access the Internet.¹⁶⁵ In 1997, only 27 percent of public school instructional classrooms had Internet access; that

¹⁵⁸ See http://www.census.gov/geo/www/cen_tract.html (describing Census Tracts and block numbering areas) (last visited July 29, 2009); <http://www.census.gov/geo/www/ezinter.html> (the Census Bureau’s resource site for selected federal programs) (last visited July 29, 2009).

¹⁵⁹ BDIA § 103(a)(3); 47 U.S.C. § 1302(c).

¹⁶⁰ See NTIA State Mapping NOFA, 74 Fed. Reg. at 32549 (defining “Unserved Area” as “[a]n area composed of one or more contiguous census blocks where at least 90 percent of households in the service area lack access to facilities-based terrestrial broadband service, either fixed or mobile, at the minimum broadband transmission speed (set forth in the definition of broadband [elsewhere in the NOFA]). A household has access to broadband service if the household can readily subscribe to that service upon request.”); NTIA/RUS BTOP/BIP NOFA, 74 Fed. Reg. at 33109 (same definition).

¹⁶¹ See NTIA/RUS BTOP/BIP NOFA, 74 Fed. Reg. at 33130 (stating that “an area that has only high-latency satellite service will . . . qualify as ‘unserved’”); *id.* (“RUS and NTIA do not include existing satellite service in defining whether a given area is unserved, even though such service may meet the threshold speed level to qualify as broadband service under the definition adopted in this NOFA. Because the general reach of satellite service can extend to the entire country, it is excluded as a factor in the unserved definition to avoid a finding that no area in the United States would be considered unserved. Such a finding would render the term meaningless.”).

¹⁶² See *supra* para. 38 (discussing latency concerns of satellite services).

¹⁶³ See 47 U.S.C. § 1302(b).

¹⁶⁴ See 47 C.F.R. §§ 54.500-54.523.

¹⁶⁵ See *Section 706 Fifth NOI*, 22 FCC Rcd at 7825, para. 28; JOHN WELLS & LAURIE LEWIS, U.S. DEPARTMENT OF EDUCATION, PUB. NO. NCES 2007-020, INTERNET ACCESS IN U.S. PUBLIC SCHOOLS AND CLASSROOMS: 1994-2005, 4-5 (2006), <http://nces.ed.gov/pubs2007/2007020.pdf> (NCES Study).

figure increased to 94 percent in 2005.¹⁶⁶ Do these figures support a conclusion that broadband is being deployed to elementary and secondary schools and classrooms on a reasonable and timely basis, including in Indian Country? Are there any other sources of information that would provide insight into whether the deployment of broadband service to elementary and secondary schools and classrooms is occurring on a reasonable and timely basis? The NCES Study results indicate that schools in rural areas have lower broadband adoption rates than their counterparts in cities, suburbs and towns.¹⁶⁷ Also according to the NCES Study, smaller schools appear less likely than larger schools to have broadband connections.¹⁶⁸ We seek comment on whether there are other particular barriers that impede or hinder access to broadband by schools. Are there additional ways in which the Commission can assist schools located in geographically isolated areas to improve access to broadband services?

56. We request comment on the meaning of the term “all Americans” as it relates to the reasonable and timely deployment of broadband capabilities. In the *Section 706 Fifth NOI*, the Commission sought comment regarding businesses, residential consumers, rural communities, elementary and secondary students, minority consumers, persons with disabilities, and individuals living on Tribal land and in the U.S. territories.¹⁶⁹ As a threshold question, we seek comment regarding whether these categories remain adequate for evaluating broadband deployment to “all Americans.” Should we separately examine these categories in this *Inquiry*? Should we further disaggregate these consumer groups by geographic areas? Do these categories sufficiently encompass state and local public safety agencies, or should we create a separate category to ensure that public safety users are adequately represented in section 706 reports?¹⁷⁰ Are there other types of consumers, or other geographic areas, that are likely to experience broadband deployment at a different pace such that we should also monitor the rate of deployment to those customers and areas? For example, should we track the rate of deployment by average income in an area? Should we track deployment to community anchor institutions and publicly available Internet access points that facilitate greater broadband use, for example, by low-income or unemployed Americans?¹⁷¹ How should our inquiry address broadband deployment to consumers who fall within more than one of these categories?¹⁷² We welcome further comment regarding types of consumers or geographical areas relevant to this inquiry, as well as any further comment regarding deployment of broadband to Americans generally.

57. We specifically seek comment on the status of deployment of broadband to consumers living in rural areas. As discussed in the *Rural Broadband Report*, although the available data are limited, recent studies suggest that urban consumers may have greater access to broadband than their rural

¹⁶⁶ NCES Study at 14, 16.

¹⁶⁷ *Id.* at 18.

¹⁶⁸ *Id.*

¹⁶⁹ See *Section 706 Fifth NOI*, 22 FCC Rcd at 7823-26, paras. 24-30; *Section 706 Fourth Report*, 19 FCC Rcd at 20569-76.

¹⁷⁰ The *National Broadband Plan NOI* included a variety of questions addressing access to and use of broadband for public safety and homeland security purposes. See *National Broadband Plan NOI*, 24 FCC Rcd at 4367-70, paras. 72-79. We will incorporate all comments, including those providing public-safety-related responses, to the *National Broadband Plan NOI* into our record here. See *supra* para. 14.

¹⁷¹ See *supra* para. 47; NTIA/RUS BTOP/BIP NOFA, 74 Fed. Reg. at 33108.

¹⁷² For example, the RURAL BROADBAND REPORT found that “people with disabilities outside metropolitan areas have a very low rate of Internet use” but that the Commission “lack[s] properly disaggregated information” about this group.” See RURAL BROADBAND REPORT at para. 29 (finding particularly low rates of broadband deployment among people with disabilities outside metropolitan areas).

counterparts.¹⁷³ We seek comment on whether this is still the case today. Do consumers in rural areas enjoy choices among technologies and tiers of advanced services comparable to those available to consumers in urban areas?

58. We further seek comment on the deployment of broadband to individuals living on Tribal lands and in the U.S. territories.¹⁷⁴ The Commission has recognized the dearth of information regarding broadband deployment on Tribal lands.¹⁷⁵ Are data available that capture deployment of advanced services in these areas? What types of unique challenges are associated with the deployment of advanced services in Tribal areas or U.S. territories? Are these challenges similar to or distinguishable from those encountered by consumers living in rural areas of the nation? In areas where services have been deployed, have they been deployed to all consumers, or just a limited number of consumers? What types of technologies are being used to provide advanced services on Tribal lands and in U.S. territories? Are there certain types of technological developments that may be especially promising for future deployment in Tribal areas or the U.S. territories? Should we consider U.S. territories and Tribal lands separately from other geographic areas?

59. We also seek focused comment on the deployment of broadband to low-income individuals. In prior section 706 inquiries, we have examined the gap in subscribership to advanced services between the highest-income ZIP codes and the lowest-income ZIP codes based on our Form 477 data.¹⁷⁶ In light of the revised data collection efforts discussed above, how can we best determine whether broadband is being made available to low-income individuals in a reasonable and timely fashion? Should the Commission analyze and report on broadband deployment to people with low incomes in a way that differentiates among rural, suburban, and urban areas, and, if so, what tools are available to facilitate this? The *Rural Broadband Report* called attention to the importance of broadband deployment in “rural areas where poverty is historical and structural.”¹⁷⁷ To what extent should the Commission attempt to identify and track deployment among different income levels in different geographic areas?

¹⁷³ *Id.* at paras. 26-27 (citing 2008 *Pew Broadband Adoption Study* and NTIA statistics comparing residents with broadband in the home in urban and rural areas).

¹⁷⁴ We recognize that Indian Country is politically distinct and, as a result, historical and legal circumstances pose unique barriers to expanded broadband deployment. “Indian Country” means: (a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation; (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state; and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. 18 U.S.C. § 1151. For the purpose of this document, Indian Country also includes Alaska Native Villages, Native Hawaiian Homeland, and Trust lands. Although section 1151 is a criminal statute, its definition of Indian Country applies in the civil context as well. In this *Inquiry*, we use “Indian Country,” “Tribal areas,” and “Tribal lands” interchangeably. We also clarify that for purposes of this *Inquiry*, the term “rural areas” may include Indian Country, although not all of Indian Country would otherwise necessarily be considered rural. To the extent that sections of Indian Country are rural in nature, they are likely to face the same—and some additional—difficulties in achieving increased broadband deployment as faced by “rural areas.” See RURAL BROADBAND REPORT at para. 31 n.54.

¹⁷⁵ See, e.g., *Section 706 Fifth Report*, 23 FCC Rcd at 9634, para. 38 (finding subscribership to Internet access services at any speed on Tribal lands to be largely unknown because no federal survey had been designed to track this information); RURAL BROADBAND REPORT at para. 30 (citing lack of data describing broadband availability or subscribership on Tribal lands).

¹⁷⁶ See *Section 706 Fifth NOI*, 22 FCC Rcd at 7824, para. 26.

¹⁷⁷ See RURAL BROADBAND REPORT at paras. 24, 31 (noting significance of broadband deployment to people living in historically impoverished rural areas).

60. In addition, we seek specific comment on whether broadband is being deployed in a reasonable and timely fashion to minority consumers.¹⁷⁸ To the extent the Commission relies on Census Tract data or other geographically-specific data, how can we best determine whether broadband is being deployed to minority consumers in a reasonable and timely fashion? Should we further disaggregate this group of consumers, and if so, what degree of specificity would be informative and appropriate?¹⁷⁹ What are the best sources of data concerning deployment to different minority groups?

61. We also seek specific comment on the extent to which persons with disabilities have access to broadband. What types of barriers do persons with disabilities encounter with respect to accessing broadband? Have there been recent developments in adaptive technologies that improve access to broadband for persons with disabilities? Is it appropriate and practicable to differentiate among people with disabilities by whether they live in urban, suburban, or rural areas, or by whether they live in Tribal areas?¹⁸⁰ To what extent do income, employment, or other factors affect the ability of persons with disabilities to access broadband?

62. In addition, as discussed above, and pursuant to BDIA section 103(b), the Commission must perform an international comparison of broadband service capability, including 75 communities (including capital cities) in 25 geographically diverse countries comparable to “various” U.S. communities.¹⁸¹ On March 31, 2009, the Commission sought comment on this requirement.¹⁸² We will incorporate the comments submitted in response to that notice into this proceeding. We seek comment on how we should use the results of the Commission’s forthcoming international comparison in assessing whether broadband is being deployed to all Americans in a reasonable and timely fashion.

63. Further, other international organizations have published international comparisons of broadband availability or deployment. We seek comment on whether and, if so, how we should use such international evaluations of broadband availability or deployment in determining whether broadband is being deployed to all Americans in a reasonable and timely fashion. Moreover, regardless of whether we rely on these evaluations, we seek comment on the regulatory strategies that other countries have used to spur broadband availability, deployment, subscribership, or adoption and whether these strategies, in fact, have proven successful.

D. What Actions Can Accelerate Broadband Deployment?

64. Pursuant to section 706, “the Commission and each State commission . . . shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans . . . by utilizing . . . price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure

¹⁷⁸ See *National Broadband Plan NOI*, 24 FCC Rcd at 4375, para. 101.

¹⁷⁹ We note Connected Nation’s assertion that, in the suburbs, broadband deployment to “minorities” surpasses broadband deployment to “nonminorities.” See CONNECTED NATION, THE CALL TO COLLECT MINORITY AMERICANS: A CONNECTED NATION POLICY BRIEF (2009), http://www.connectednation.org/research/Minority_Americans_Policy_Brief.php (broadband deployment to “suburban minorities” (59%) exceeds broadband deployment to “suburban nonminorities” (55%) and significantly exceeds broadband deployment to “all adults” (50%).

¹⁸⁰ RURAL BROADBAND REPORT at para. 29 (finding particularly low rates of broadband deployment among people with disabilities outside metropolitan areas).

¹⁸¹ See *supra* para. 17; see also BDIA § 103(b); 47 U.S.C. § 1303(b).

¹⁸² See *BDIA Public Notice*, 24 FCC Rcd 3908.

investment.”¹⁸³ To the extent commenters advocate that we should undertake additional actions to encourage the deployment of broadband, they should set forth those proposals with specificity.

65. If the Commission finds that broadband is not being deployed in a reasonable and timely manner, the Commission must “take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market.”¹⁸⁴ Are there specific areas in the United States, such as rural areas, Tribal lands, or groups of Americans for whom the pace of deployment justifies action under section 706 to remove barriers to infrastructure investment or to promote competition? If so, what are the specific barriers to entry that are inhibiting broadband infrastructure investment? What authority does the Commission have to remove any such barriers—particularly barriers not resulting from Commission regulation—and what actions would be warranted? In addition, what specific steps could the Commission take to promote broadband competition in such areas or among such groups of Americans? Are there any other actions the Commission should take to promote the deployment of broadband, and what monetary and other costs and benefits would result from any such actions?

66. In assessing what actions the Commission should take to encourage the deployment of broadband, we ask parties to consider the recent *Rural Broadband Report*, submitted to Congress by the Acting Chairman of the Commission, in coordination with the Secretary of the USDA. The *Rural Broadband Report* includes a number of recommendations to facilitate broadband to rural areas, including, for example, enhancing coordination among and between federal, Tribal, state governments, and community organizations overall and coordinating specific broadband initiatives, such as data collection and mapping efforts.¹⁸⁵ Are any of the recommendations in the *Rural Broadband Report* relevant to our 706 inquiry here? Would the recommendations of the *Rural Broadband Report* be an appropriate response if the Commission is required to “take immediate action to accelerate” such capability is not being deployed in a reasonable and timely manner?

E. What Actions Should the Commission Take to Improve Its Regular Broadband Data Collection Efforts?

67. We seek comment on what actions the Commission should take to improve its regular broadband data collections. Last year, the Commission issued a Further Notice of Proposed Rulemaking on possible changes to its Form 477 broadband data gathering program, asking questions about broadband mapping, gathering information on actual speeds experienced by consumers, pricing information, confidentiality, and surveys.¹⁸⁶ Much has happened since then. As described above, the BDIA addresses mapping, consumer surveys, and other issues.¹⁸⁷ And NTIA has recently issued a NOFA for its mapping grant program.¹⁸⁸ We seek comment in light of these developments on what actions the Commission should take to ensure that, in the future, we will have rich information about broadband to inform our policymaking activities, to support the activities of other agencies and other levels of government, and to provide to consumers, researchers, and industry about the state of broadband in our nation.

¹⁸³ See 47 U.S.C. § 1302(a).

¹⁸⁴ See 47 U.S.C. § 1302(b).

¹⁸⁵ RURAL BROADBAND REPORT at para. 13.

¹⁸⁶ 2008 *Broadband Data Gathering Order*, 23 FCC Rcd at 9708-12, paras. 34-40.

¹⁸⁷ See *supra* Parts III.A.2 & III.B.3.a.

¹⁸⁸ NTIA State Mapping NOFA.

V. PROCEDURAL MATTERS

A. Paperwork Reduction Act

68. This document does not contain proposed information collection(s) subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified “information collection burden for small business concerns with fewer than 25 employees,” pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 47 U.S.C. § 3506(c)(4).

B. Ex Parte Presentations

69. The inquiry this Notice initiates shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s *ex parte* rules.¹⁸⁹ Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented generally is required.¹⁹⁰ Other requirements pertaining to oral and written presentations are set forth in section 1.1206(b) of the Commission’s rules.¹⁹¹

C. Comment Filing Procedures

70. Pursuant to sections 1.415 and 1.419 of the Commission’s rules,¹⁹² interested parties may file comments and reply comments regarding the Notice on or before the dates indicated on the first page of this document. **All filings related to this Notice of Inquiry should refer to GN Docket No. 09-137 and GN Docket No. 09-51.** Comments may be filed using: (1) the Commission’s Electronic Comment Filing System (ECFS), (2) the Federal Government’s eRulemaking Portal, or (3) by filing paper copies. *See Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://www.fcc.gov/cgb/ecfs/> or the Federal eRulemaking Portal: <http://www.regulations.gov>. Filers should follow the instructions provided on the website for submitting comments.
- ECFS filers must transmit one electronic copy of the comments for GN Docket No. 09-137 and GN Docket No. 09-51. In completing the transmittal screen, filers should include their full name, U.S. Postal Service mailing address, and the applicable docket number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions, filers should send an e-mail to ecfs@fcc.gov, and include the following words in the body of the message, “get form.” A sample form and directions will be sent in response.
- Paper Filers: Parties who choose to file by paper must file an original and four copies of each filing. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). All filings must be addressed to the Commission’s Secretary, Marlene H. Dortch, Office of the Secretary, Federal Communications Commission, 445 12th Street, S.W., Washington, DC 20554.
- The Commission’s contractor will receive hand-delivered or messenger-delivered paper filings for the Commission’s Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, DC 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand

¹⁸⁹ 47 C.F.R. §§ 1.200 *et seq.*

¹⁹⁰ *See* 47 C.F.R. § 1.1206(b)(2).

¹⁹¹ 47 C.F.R. § 1.1206(b).

¹⁹² 47 C.F.R. §§ 1.415, 1.419.

deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building.

- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail should be addressed to 445 12th Street, S.W., Washington DC 20554.
- Parties should send a copy of their filings to the Competition Policy Division, Wireline Competition Bureau, Federal Communications Commission, Room 5-C140, 445 12th Street, S.W., Washington, DC 20554, or by e-mail to epdcopies@fcc.gov. Parties shall also serve one copy with the Commission's copy contractor, Best Copy and Printing, Inc. (BCPI), Portals II, 445 12th Street, S.W., Room CY-B402, Washington, DC 20554, (202) 488-5300, or via e-mail to fcc@bcpiweb.com.
- Documents in GN Docket Nos. 09-137 and 09-51 will be available for public inspection and copying during business hours at the FCC Reference Information Center, Portals II, 445 12th Street S.W., Room CY-A257, Washington, DC 20554. The documents may also be purchased from BCPI, telephone (202) 488-5300, facsimile (202) 488-5563, TTY (202) 488-5562, e-mail fcc@bcpiweb.com.

D. Accessible Formats

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

VI. ORDERING CLAUSE

72. Accordingly, IT IS ORDERED that, pursuant to section 706 of the Telecommunications Act of 1996, as amended, 47 U.S.C. § 1302, this *Notice of Inquiry* IS ADOPTED.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX

Commission's Report on High-Speed Services for Internet Access: Status as of June 30, 2008

High-Speed Services for Internet Access: Status as of June 30, 2008

Industry Analysis and Technology Division
Wireline Competition Bureau
July 2009



This report is available for reference in the FCC's Reference Information Center, Courtyard Level, 445 12th Street, SW, Washington, DC. Copies may be purchased by contacting Best Copy and Printing, Inc., 445 12th Street, SW, Room CY-B402, Washington, DC 20554, telephone (800) 378-3160, or via their website at www.bcpweb.com. The report can also be downloaded from the Wireline Competition Bureau Statistical Reports Internet site at www.fcc.gov/wcb/stats.

High-Speed Services for Internet Access: Status as of June 30, 2008

Congress directed the Commission and the states, in section 706 of the Telecommunications Act of 1996, to encourage deployment of advanced telecommunications capability in the United States on a reasonable and timely basis.¹ To assist in its evaluation of such deployment, in 2000 the Commission instituted a formal data collection program (FCC Form 477) to gather standardized information about subscribership to high-speed services, including advanced services, from wireline telephone companies, cable system operators, terrestrial wireless service providers, satellite service providers, and any other facilities-based providers of advanced telecommunications capability.² Filers were required to report the number of subscribers they had in each state, broken down by speed tier and technology, and to identify all Zip Codes in which they had at least one high-speed connection in service.³

The Commission and others have recognized these requirements as insufficiently granular or precise to inform necessary policymaking. In June 2008, the Commission released a Report and Order (FCC 08-89) and Order on Reconsideration (FCC 08-148), which together implemented significant improvements to the way in which the Commission collects data on these services.⁴ As part of these improvements, which were effective for the March 2009 collection of data as of year-end 2008, providers of wired broadband, fixed-wireless broadband, and satellite-based broadband connections report subscriber counts at the Census Tract level rather than the state level, and all filers report their connections in accordance with an increased number of upload and download transmission speed tiers. In conjunction with measures underway pursuant to the Broadband Data Improvement Act and the Recovery Act,⁵ the new Form 477 data will provide

¹ See §706, Pub.L. 104-104, Title VII, Feb. 8, 1996, 110 Stat. 153, reproduced in the notes under 47 U.S.C. § 157. In this report, we use the term “high-speed” to describe services that provide the subscriber with transmissions at a speed in excess of 200 kilobits per second (kbps) in at least one direction. “Advanced services,” which provide the subscriber with transmission speeds in excess of 200 kbps in each direction, are a subset of high-speed services.

² *Local Competition and Broadband Reporting*, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717 (2000); *Local Telephone Competition and Broadband Reporting*, WC Docket No. 04-141, Report and Order, 19 FCC Rcd 22340 (2004). Qualifying entities file FCC Form 477 each year on March 1 (reporting data for the preceding December 31) and September 1 (reporting data for June 30 of the same year). The first data collected were as of December 31, 1999.

³ Because of the inherent mobility of their service, mobile wireless providers reported subscribers by state and the Zip Codes that best represented their broadband-network coverage area. In addition to reporting subscribers by state and Zip Codes with connections in service, incumbent telephone companies and cable system operators reported their DSL or cable modem service *availability* to the housing units in their service area in the state.

⁴ *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership*, WC Docket No. 07-38, Report and Order, 23 FCC Rcd 9691 (2008); Order on Reconsideration, 23 FCC Rcd 9800 (2008). Effective with the filing of data as of December 31, 2008, Form 477 is a Web-based electronic filing system. Information about this system is available at <http://www.fcc.gov/form477/>.

⁵ See 47 U.S.C. § 1301 *et seq.* (Broadband Data Improvement Act); American Recovery and Reinvestment Act of 2008, Pub.L. 111-5, 123 Stat. 115 (2009) (Recovery Act).

the Commission and the public with a more valuable resource for evaluating the state of broadband in the country.

Statistics reported here reflect data as of June 30, 2008, and are the last to be based on data collected under the previous Form 477 requirements.⁶ Readers can draw the following broad conclusions from the data summarized in this report:

- High-speed lines connecting homes and businesses to the Internet at speeds exceeding 200 kbps in *at least one* direction increased by 10% during the first half of 2008, from 121.1 million lines to 132.8 million lines in service, following a 20% increase, from 101.0 million to 121.2 million lines, during the second half of 2007. For the full twelve-month period ending June 30, 2008, high-speed lines increased by 32% (or 31.8 million lines). See Table 1 and Chart 1.
- ADSL lines increased by 0.5 million lines during the first half of 2008, fiber connections increased by 0.5 million lines, and cable modem service increased by 1.7 million lines. For the full twelve-month period ending June 30, 2008, ADSL increased by 2.2 million lines, fiber connections increased by 1.1 million lines, and cable modem service increased by 3.8 million lines. See Table 1.

⁶ The terms “high-speed connections” and “broadband connections” are synonyms in this report. The reported connections terminate at end user locations and enable the end user to receive information from and/or send information to the Internet at information transfer rates exceeding 200 kbps in at least one direction. “End users” are residential, business, institutional, or government entities who use services for their own purposes and who do not resell such services to other entities. The “facilities-based” provider of a broadband connection is the entity that owns the portion of the physical facility that terminates at the end user location, obtains an unbundled network element (UNE), special access line, or other leased facility that terminates at the end user location and provisions/equips it as broadband, or provisions/equips a broadband wireless channel to the end user location over licensed spectrum or over spectrum that the provider uses on an unlicensed basis. Facilities-based providers report information about connections they provide directly to their own end-user customers and also connections that they provide to Internet Service Providers for resale to end users.

Prior to June 2005, providers with fewer than 250 high-speed connections in service in a particular state were not required to report data for that state. Therefore, small providers, many of whom serve rural areas with relatively small populations, were underrepresented in the data. Including these providers resulted in a one-time increase – from 552 in December 2004 to 1,270 in June 2005 – in the number of holding companies and unaffiliated entities reporting information about high-speed connections. See Table 7. High-speed lines reported in voluntary submissions of data prior to June 2005 represented less than 0.05% of total reported high-speed lines. As of June 30, 2005, filers with fewer than 250 lines in a state (including some entities that previously made voluntary submissions) represented about 0.2% of total reported high-speed lines.

Statistical summaries of the earlier Form 477 data collections appeared in *Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146, Second Report, 15 FCC Rcd 20913 (2000) (*Second 706 Report*), available at www.fcc.gov/broadband/706.html, and in previous releases of the *High-Speed Services for Internet Access* report, available at www.fcc.gov/wcb/stats.

- Of the 132.8 million total high-speed lines, 28.8% were cable modem, 22.6% were ADSL, 0.7% were symmetric DSL (SDSL) or traditional wireline, 1.8% were fiber to the end user premises, and 46.2% used other technologies.⁷ See Chart 2.
- Lines connecting homes and businesses to the Internet at transmission speeds exceeding 200 kbps in *both* directions increased from 80.3 million lines to 88.4 million lines during the first half of 2008. For the full twelve-month period ending June 30, 2008, they increased by 18.8 million, from 69.6 million lines to 88.4 million lines. See Table 2 and Chart 3.
- Of the 88.4 million lines which were faster than 200 kbps in *both* directions, 42.8% were cable modem, 29.6% were ADSL, 1.1% were SDSL or traditional wireline, 2.7% were fiber to the end user premises, and 23.9% used other technologies. See Chart 4.
- Of the 132.8 million total high-speed lines, 79.1 million were designed to serve primarily residential end users. Cable modem represented 46.7% of these lines while 34.1% were ADSL, 0.1% were SDSL or traditional wireline connections, 2.7% were fiber to the end user premises, and 16.4% used other technologies. See Table 3 and Chart 6. For state-specific data, see Table 13.
- Of the 88.4 million lines that were faster than 200 kbps in *both* directions, 74.5 million lines were designed to serve primarily residential end users. Of these, cable modem represented 49.2% while 31.3% were ADSL, 0.2% were SDSL or traditional wireline, 2.9% were fiber to the end user premises, and 16.5% used other technologies. See Table 4 and Chart 8.
- Of the 88.4 million reported high-speed lines that were faster than 200 kbps in *both* directions as of June 30, 2008, 55.5% were at least 2.5 mbps in the faster direction and 44.5% were slower than 2.5 mbps in the faster direction. See Table 5.
- Incumbent LECs or their affiliates reported 97.3% of ADSL connections, 91.8% of fiber-to-the-premises connections, 81.3% of the mobile service subscribers whose wireless device is capable of operating on a high-speed mobile wireless network, and 32.4% of traditional wireline connections. When all technologies are considered, incumbent LECs reported 60.4% of total high-speed connections. See Table 6.
- High-speed lines were reported in all 50 states, the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and the Virgin Islands. See Table 9 and, for historical data, Tables 10 - 12.

⁷ Providers are instructed to report a high-speed connection in the (mutually exclusive) technology category that characterizes the last few feet of distribution plant to the subscriber's premises. In addition to cable modem, ADSL, SDSL, traditional wireline when used for Internet access, and optical carrier (fiber to the end user) connections, reporting entities specify satellite, terrestrial fixed wireless (licensed or unlicensed), terrestrial mobile wireless (licensed or unlicensed), electric power line, or "all other" technology. See additional notes following Chart 10.

- As a nationwide average, we estimate that high-speed DSL connections were available to 83% of the households to whom incumbent LECs could provide local telephone service, and that high-speed cable modem service was available to 96% of the households to whom cable system operators could provide cable TV service. See Table 14.
- Providers other than providers of terrestrial mobile wireless services listed the Zip Codes in which they had at least one high-speed connection in service to an end user, while terrestrial mobile wireless service providers listed the Zip Codes that best represented their service territories. Combining these data, 100% of 5-digit geographical Zip Codes were represented in the lists filed for June 2008.⁸ The most widely reported technologies by this measure were high-speed mobile wireless (with at least some presence reported in 99% of Zip Codes), satellite (in 93% of Zip Codes), ADSL (in 87% of Zip Codes), and cable modem service (in 67% of Zip Codes). ADSL and/or cable modem connections were reported to be present in 91% of Zip Codes.⁹ See Tables 15 and 16, and the map that follows Table 16. For state-specific data, see Table 17.
- High population density and high median household income each have had a positive association with reports that high-speed subscribers are present. See Tables 18 and 19.

As other information from the Commission's data collection program (FCC Form 477) becomes available, it will be included in future reports on the deployment of advanced telecommunications capability and in publications such as this one.

We invite users of this information to provide suggestions for improved data collection and analysis by:

- Using the attached customer response form,
- E-mailing comments to James.Eisner@fcc.gov or Suzanne.Mendez@fcc.gov,
- Calling the Industry Analysis and Technology Division of the Wireline Competition Bureau at (202) 418-0940, or
- Participating in any formal proceedings undertaken by the Commission to solicit comments for improvement of FCC Form 477.

⁸ Lists of Zip Codes with number of service providers as reported in the FCC Form 477 filings are made available at www.fcc.gov/wcb/stats in a format that honors requests for nondisclosure of information the reporting entities assert is competitively sensitive. Form 477 filings of data after June 30, 2008 will not include broadband provider Zip Code lists. The later filings will include broadband information based on census tracts.

⁹ The 91.4% figure includes Zip Codes with either ADSL subscribers reported, cable modem subscribers reported, or both. In 63.0% of Zip Codes, both ADSL and cable modem subscribers have been reported. In 24.2% of Zip Codes, there are ADSL subscribers reported but no cable modem subscribers, and in 4.2% of Zip Codes there are cable modem subscribers reported but no ADSL subscribers reported.

Table 1
High-Speed Lines ¹
(Over 200 kbps in at least one direction)

Technology ²	2002	2003	2004	2005		2006		2007		2008
	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun	Dec	Jun
ADSL	5,101,493	7,675,114	11,398,199	16,316,309	19,515,483	22,583,548	25,412,509	27,792,800	29,449,166	29,963,968
SDSL and Traditional Wireline	1,186,680	1,215,713	1,407,121	898,468	741,904	809,209	889,266	941,685	898,363	939,692
SDSL	-	-	-	411,731	368,782	337,412	344,759	319,991	293,421	274,582
Traditional Wireline	-	-	-	486,737	373,122	471,797	544,507	621,694	604,942	665,110
Cable Modem	9,172,895	13,684,225	18,592,636	24,017,442	26,558,206	29,173,449	31,981,705	34,404,368	36,506,972	38,190,355
Fiber ³	105,991	111,386	130,928	315,651	298,052	547,082	893,995	1,280,994	1,848,565	2,346,328
Satellite and Wireless	220,588	309,006	421,690	965,068	3,812,029	11,873,157	23,343,199	36,560,869	52,514,007	61,368,444
Satellite	-	-	-	376,837	426,928	495,365	571,980	668,803	791,142	869,450
Fixed Wireless	-	-	-	208,695	257,431	361,272	483,470	586,813	706,552	808,375
Mobile Wireless	-	-	-	379,536	3,127,670	11,016,520	22,287,749	35,305,253	51,016,313	59,690,619
Power Line and Other	-	-	-	4,872	4,571	5,208	4,776	5,420	5,274	5,197
Total Lines	15,787,647	22,995,444	31,950,574	42,517,810	50,930,245	64,991,653	82,525,450	100,986,136	121,222,347	132,813,984

For data through December 2004, only those providers with at least 250 lines per state were required to file. Some historical data have been revised back through December 2005. See additional notes following Chart 10.

Chart 1
Total High-Speed Lines

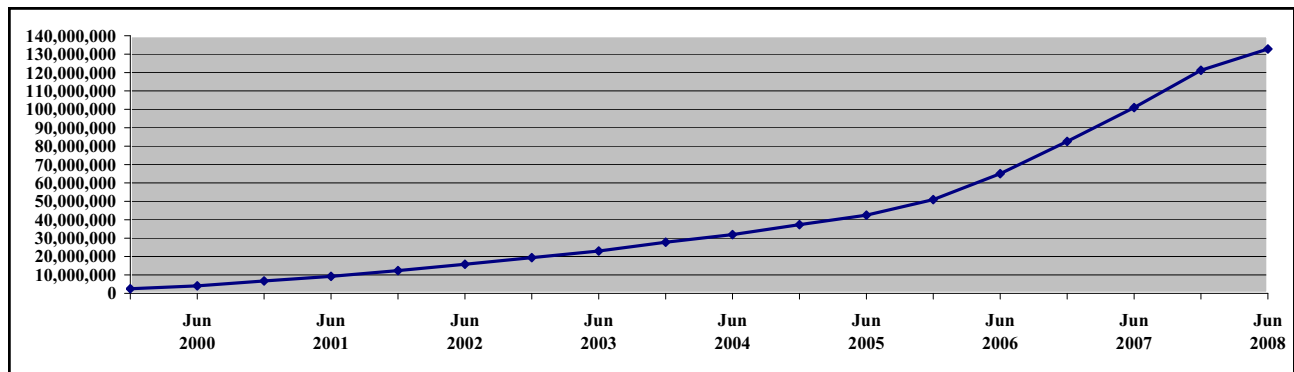


Chart 2
High-Speed Lines by Technology as of June 30, 2008

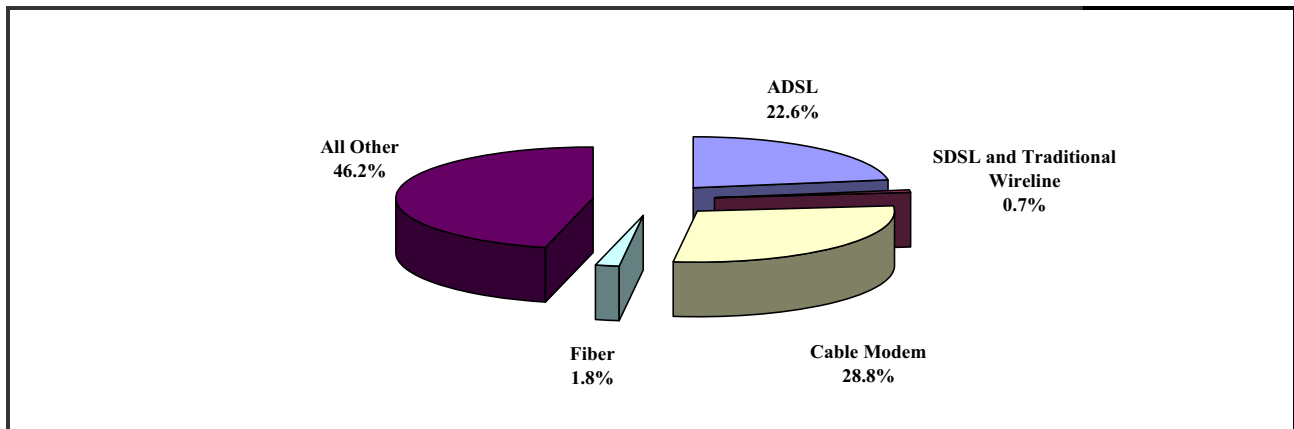


Table 2
Advanced Services Lines¹
(Over 200 kbps in both directions)

Technology ²	2002	2003	2004	2005		2006		2007		2008
	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun	Dec	Jun
ADSL	1,852,879	2,536,368	3,768,019	13,176,095	15,921,336	18,310,250	21,143,785	23,656,827	25,243,814	26,132,248
SDSL and Traditional Wireline	1,186,680	1,215,713	1,407,121	869,772	737,192	807,951	888,350	940,971	898,295	939,543
SDSL	-	-	-	387,451	368,736	336,586	344,739	319,352	293,426	274,582
Traditional Wireline	-	-	-	482,321	368,456	471,365	543,611	621,619	604,869	664,961
Cable Modem	6,819,395	11,935,866	17,567,468	22,745,012	26,293,596	28,892,961	31,594,111	33,935,733	36,165,251	37,848,833
Fiber ³	104,015	110,829	129,636	314,229	297,048	545,992	892,637	1,278,906	1,844,767	2,344,477
Satellite and Wireless	66,073	64,393	93,805	223,274	338,635	2,275,313	4,981,768	9,801,348	16,096,448	21,143,958
Satellite	-	-	-	10,966	36,331	27,489	36,026	57,202	73,747	155,312
Fixed Wireless	-	-	-	191,229	220,268	333,368	454,834	554,316	675,489	763,121
Mobile Wireless	-	-	-	21,079	82,036	1,914,456	4,490,908	9,189,830	15,347,212	20,225,525
Power Line and Other	-	-	-	4,174	4,501	5,209	4,776	5,420	5,274	5,197
Total Lines	10,029,042	15,863,169	22,966,048	37,332,557	43,592,308	50,837,676	59,505,427	69,619,205	80,253,849	88,414,256

For data through December 2004, only those providers with at least 250 lines per state were required to file. Some historical data have been revised back through December 2005. See additional notes following Chart 10.

Chart 3
Advanced Services Lines

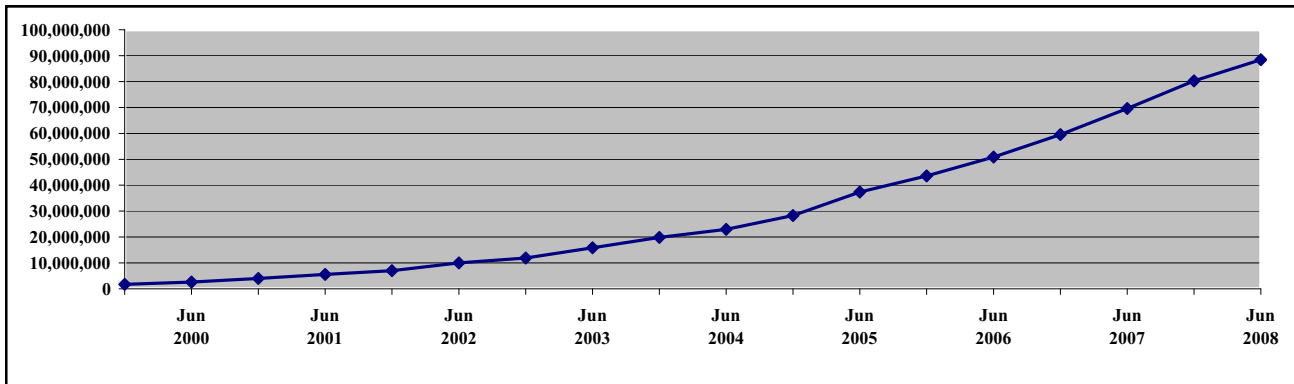


Chart 4
Advanced Services Lines by Technology as of June 30, 2008

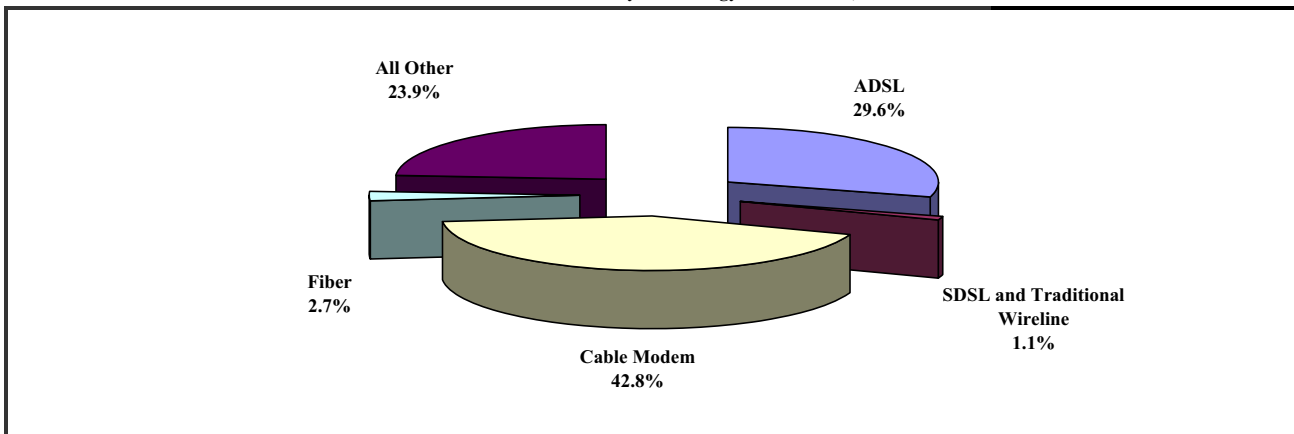


Table 3
Residential High-Speed Lines ¹
(Over 200 kbps in at least one direction)

Technology ²	2002	2003	2004	2005		2006		2007		2008
	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun	Dec	Jun
ADSL	4,395,033	6,429,938	10,759,495	14,442,823	17,370,508	20,151,612	22,768,119	24,961,878	26,475,392	26,949,947
SDSL and Traditional Wireline	223,599	250,372	393,049	159,489	129,444	112,017	117,708	117,522	99,579	112,689
SDSL	-	-	-	153,978	122,220	102,605	105,012	105,029	82,284	80,971
Traditional Wireline	-	-	-	5,511	7,224	9,412	12,696	12,493	17,295	31,718
Cable Modem	9,157,285	13,660,541	18,525,265	23,578,060	25,714,461	28,387,732	31,118,079	33,336,493	35,341,445	36,900,880
Fiber ³	6,120	16,132	22,719	83,293	213,479	444,147	763,987	1,153,058	1,682,639	2,138,584
Satellite and Wireless	202,251	288,786	387,563	428,367	532,391	1,840,202	3,571,381	6,598,757	10,379,504	12,982,393
Satellite	-	-	-	265,017	320,142	382,047	455,936	530,357	626,466	705,126
Fixed Wireless	-	-	-	160,775	203,179	301,435	423,524	523,180	644,012	741,230
Mobile Wireless	-	-	-	2,574	9,071	1,156,720	2,691,921	5,545,220	9,109,026	11,536,037
Power Line and Other	-	-	-	4,447	4,550	5,093	4,711	5,347	5,159	5,082
Total Lines	13,984,287	20,645,769	30,088,091	38,696,480	43,964,834	50,940,803	58,343,985	66,173,055	73,983,718	79,089,575

For data through December 2004, only those providers with at least 250 lines per state were required to file. Small business lines were included in totals through December 2004. Some historical data have been revised back through December 2005. See additional notes following Chart 10.

Chart 5
Residential High-Speed Lines

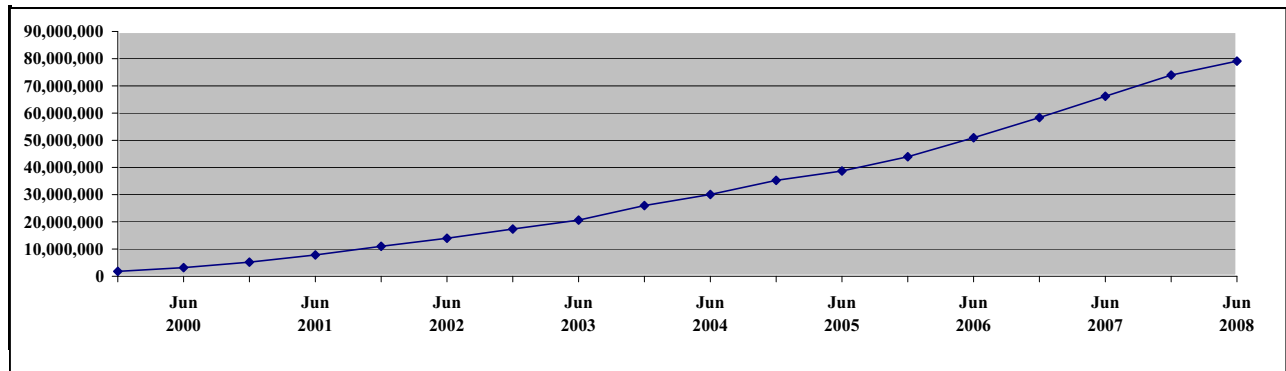


Chart 6
Residential High-Speed Lines by Technology as of June 30, 2008

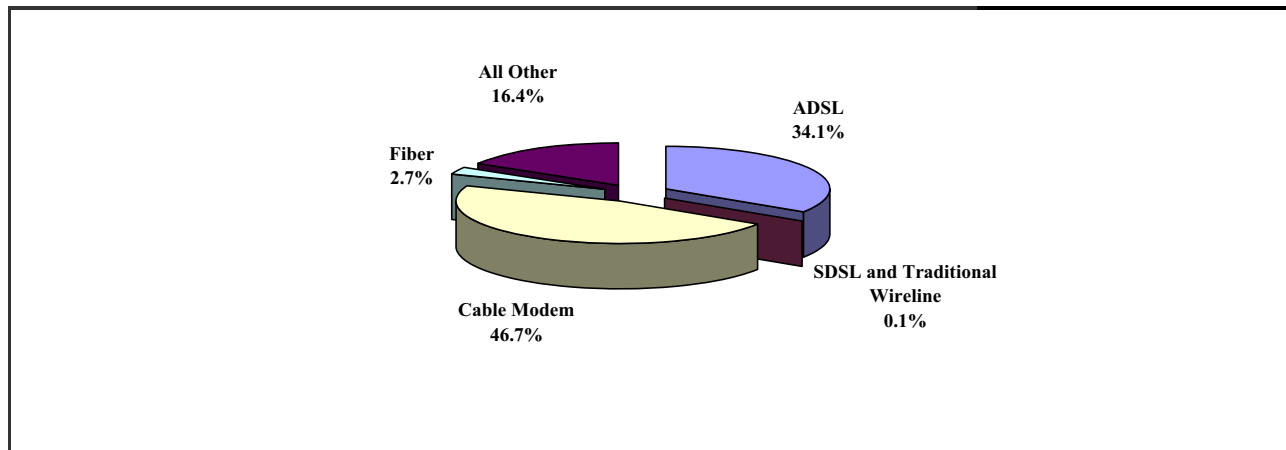


Table 4
Residential Advanced Services Lines ¹
(Over 200 kbps in both directions)

Technology ²	2002	2003	2004	2005		2006		2007		2008
	Jun	Jun	Jun	Jun	Dec	Jun	Dec	Jun	Dec	Jun
ADSL	1,580,575	2,071,779	3,174,022	11,731,303	14,242,291	16,415,844	18,878,492	21,106,148	22,555,534	23,315,454
SDSL and Traditional Wireline	223,599	250,372	393,049	151,979	125,116	111,935	117,652	116,966	99,551	112,667
SDSL	-	-	-	149,862	122,220	102,580	105,002	104,517	82,284	80,971
Traditional Wireline	-	-	-	2,118	2,895	9,355	12,650	12,449	17,267	31,696
Cable Modem	6,809,170	11,920,207	17,505,907	22,324,471	25,533,423	28,159,416	30,770,517	32,916,212	35,035,299	36,600,250
Fiber ³	5,118	15,751	21,866	82,831	212,862	443,248	762,676	1,151,109	1,680,118	2,136,994
Satellite and Wireless	47,787	46,407	72,485	150,893	204,703	1,449,441	3,114,137	6,074,862	9,772,245	12,288,019
Satellite	-	-	-	2,244	25,117	15,055	23,334	35,319	47,743	62,913
Fixed Wireless	-	-	-	146,074	170,515	277,666	398,882	494,341	616,643	700,354
Mobile Wireless	-	-	-	2,574	9,071	1,156,720	2,691,921	5,545,202	9,107,859	11,524,752
Power Line and Other	-	-	-	3,916	4,481	5,093	4,711	5,347	5,159	5,082
Total Lines	8,666,249	14,304,515	21,167,329	34,445,394	40,322,876	46,584,977	53,648,185	61,370,644	69,147,906	74,458,466

For data through December 2004, only those providers with at least 250 lines per state were required to file. Small business lines were included in totals through December 2004. Some historical data have been revised back through December 2005. See additional notes following Chart 10.

Chart 7
Residential Advanced Services Lines

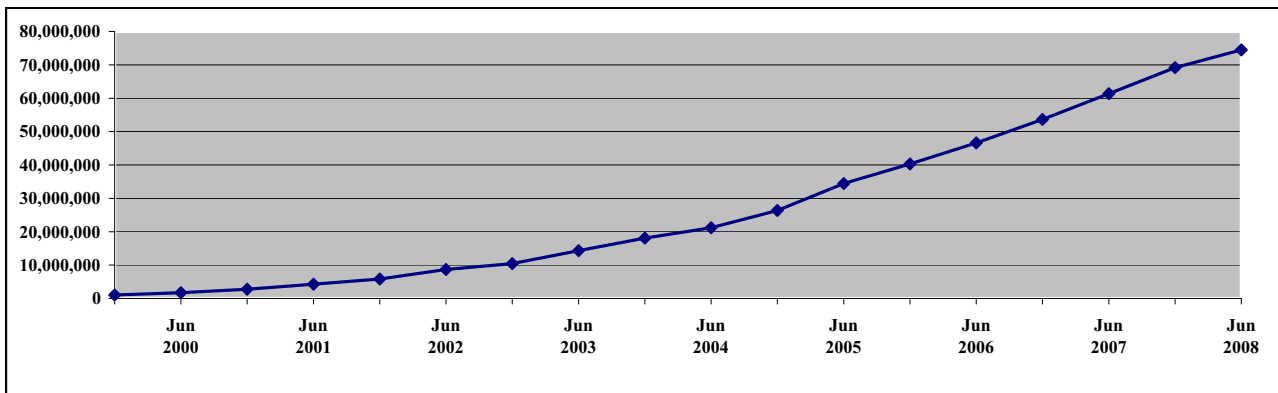


Chart 8
Residential Advanced Services Lines by Technology as of June 30, 2008

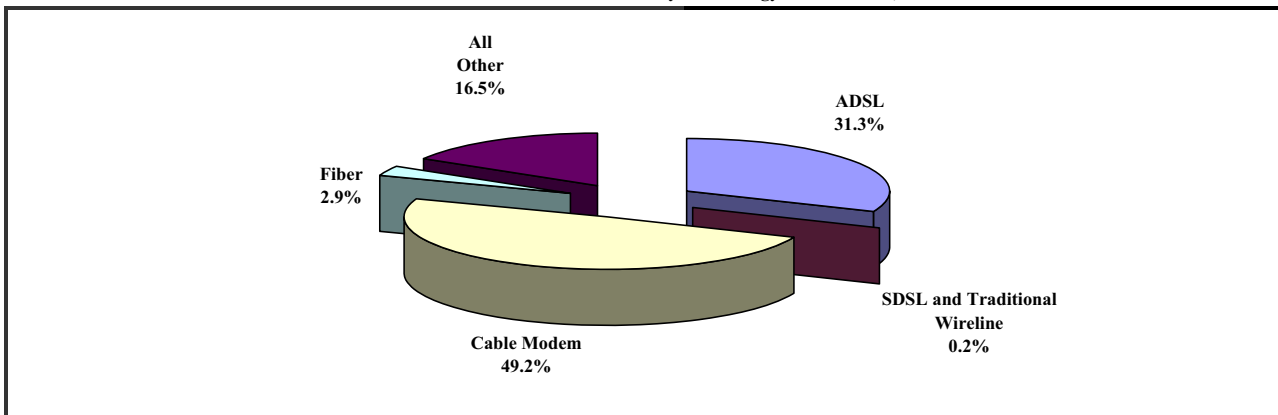


Table 5
High-Speed Lines by Information Transfer Rates ¹
As of June 30, 2008

Technology ²	Exceeding 200 kbps in only one direction	Exceeding 200 kbps in both directions, and:				
		Greater than 200 kbps and less than 2.5 mbps in the faster direction	Greater than or equal to 2.5 mbps and less than 10 mbps in the faster direction	Greater than or equal to 10 mbps and less than 25 mbps in the faster direction	Greater than or equal to 25 mbps and less than 100 mbps in the faster direction	Greater than or equal to 100 mbps in the faster direction
ADSL	3,831,720	13,438,371	12,621,752	72,125	0	0
SDSL	0	261,179	13,119	*	*	0
Traditional Wireline	149	561,427	60,249	8,712	8,095	26,478
Cable Modem	341,522	3,880,514	29,302,547	4,559,560	*	*
Fiber	1,851	139,442	903,130	1,260,683	15,857	25,365
Satellite	714,138	*	*	0	0	0
Fixed Wireless	45,254	713,691	48,429	736	*	*
Mobile Wireless	39,465,094	*	*	*	0	0
Power Line and Other	0	*	*	0	*	0
Total Lines	44,399,728	39,371,371	42,958,483	5,902,037	129,569	52,796

* Data withheld to maintain firm confidentiality.
See notes following Chart 10.

Chart 9
Lines by Information Transfer Rates in the Faster Directions as of June 30, 2008
(Includes only lines exceeding 200 kbps in both directions)

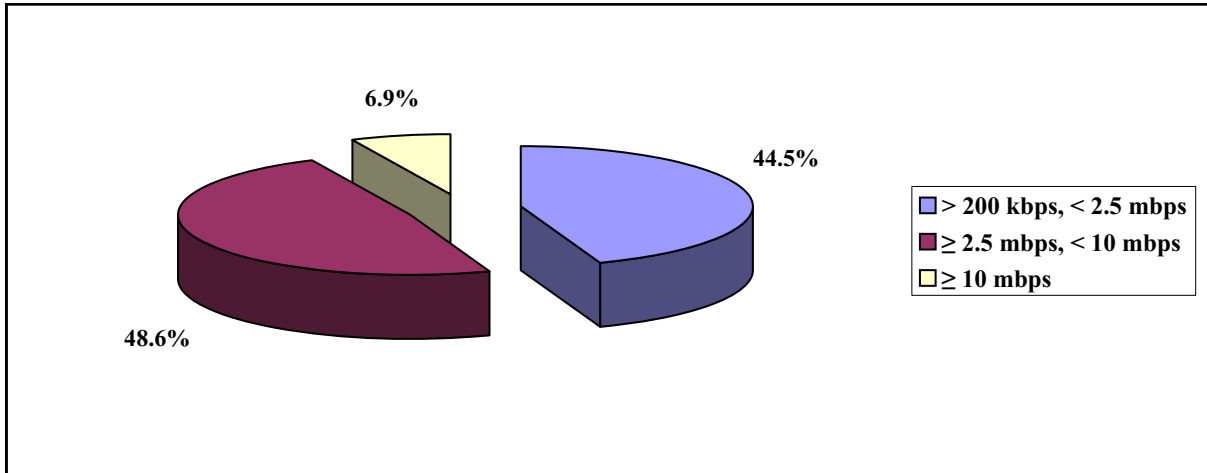


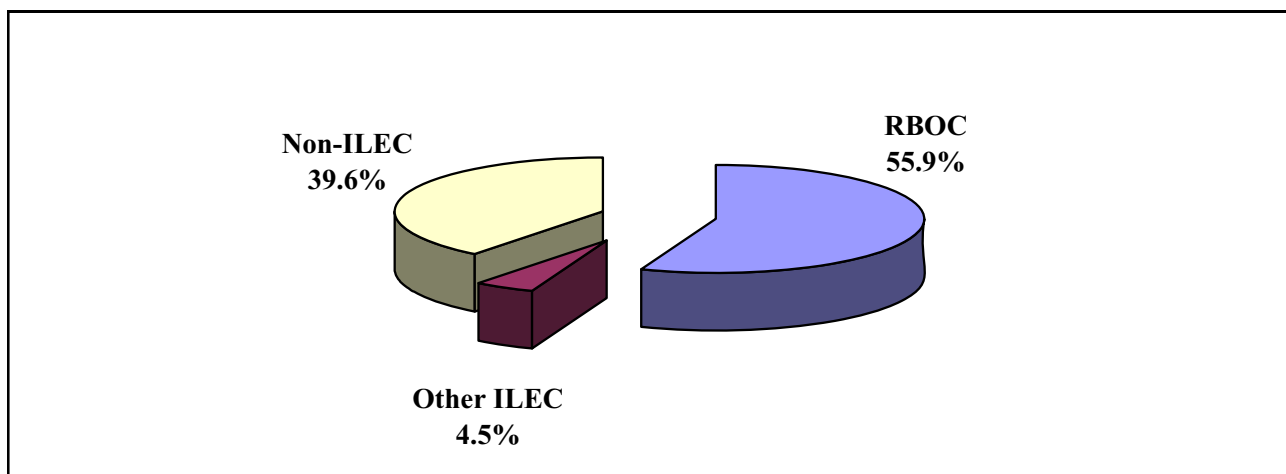
Table 6
High-Speed Lines by Type of Provider as of June 30, 2008 ¹
(Over 200 kbps in at least one direction)

Technology ²	Lines				Percent of Lines		
	RBOC ⁴	Other ILEC	Non-ILEC ⁵	Total	RBOC ⁴	Other ILEC	Non-ILEC ⁵
ADSL	23,507,656	5,633,473	822,839	29,963,968	78.5 %	18.8 %	2.7 %
SDSL	*	*	193,027	274,582	*	*	70.3
Traditional Wireline	192,234	23,187	449,689	665,110	28.9	3.5	67.6
Cable Modem	*	*	38,088,528	38,190,355	*	*	99.7
Fiber	2,058,460	95,799	192,069	2,346,328	87.7	4.1	8.2
Satellite	0	0	869,450	869,450	0.0	0.0	100.0
Fixed Wireless	*	*	784,732	808,375	*	*	97.1
Mobile Wireless	*	*	11,164,860	59,690,619	*	*	18.7
Power Line and Other	0	0	5,197	5,197	0.0	0.0	100.0
Total Lines	74,287,484	5,956,109	52,570,391	132,813,984	55.9 %	4.5 %	39.6 %

* Data withheld to maintain firm confidentiality.

See notes following Chart 10.

Chart 10
Share of High-Speed Lines by Type of Provider as of June 30, 2008



Notes for Tables 1 - 6 and Charts 1 - 10.

Advanced services lines, residential high-speed lines, and residential advanced services lines are estimated based on data reported on FCC Form 477. Therefore, figures may not add to totals due to rounding.

¹ In this report, high-speed lines are connections to end-user locations that deliver services at speeds exceeding 200 kbps in at least one direction. Advanced services lines, which are a subset of high-speed lines, are connections that deliver services at speeds exceeding 200 kbps in both directions. In Tables 2 and 4, we enumerate those reported high-speed lines that also qualify as advanced services lines. More detailed information about connection speeds is presented in Table 5. Line counts presented in this report are not adjusted for the number of persons at a single end-user location who have access to, or who use, the Internet-access services that are delivered over the high-speed connection to that location.

² The mutually exclusive types of technology are, respectively: Asymmetric digital subscriber line (ADSL) technologies, which provide speeds in one direction greater than speeds in the other direction; symmetric digital subscriber line (SDSL) technologies; traditional wireline technologies when used to provide equivalent Internet access functionality, including Ethernet service if delivered to the subscriber's location over copper (as opposed to optical fiber) plant; cable modem, including the typical hybrid fiber-coax (HFC) architecture of upgraded cable TV systems; optical fiber to the subscriber's premises (e.g., Fiber-to-the-Home, or FTTH); satellite and fixed and mobile terrestrial wireless systems, which use radio spectrum to communicate with a radio transmitter; electric power line; and other.

³ Fiber lines included electric power line through December 2004.

⁴ RBOC lines include lines owned by AT&T, Qwest and Verizon, and their affiliates.

⁵ High-speed lines reported by non-ILEC affiliates of RBOCs are reported in the column for RBOC lines and are excluded from the column for non-ILEC lines. Lines reported by non-ILEC affiliates of ILECs other than the RBOCs are reported in the column for non-ILEC lines.

Table 7
Nationwide Number of Providers of High-Speed Lines by Technology
(Over 200 kbps in at least one direction)

	ADSL	Cable Modem	All Other ¹	Total
Dec 1999	28	43	65	105
Jun 2000	47	36	75	116
Dec 2000	68	39	87	136
Jun 2001	86	47	98	160
Dec 2001	117	59	122	203
Jun 2002	142	68	138	237
Dec 2002	178	87	169	299
Jun 2003	235	98	217	378
Dec 2003	274	110	246	432
Jun 2004	298	129	281	485
Dec 2004	352	147	312	552
Jun 2005	758	227	779	1,270
Dec 2005	818	242	833	1,345
Jun 2006	833	254	816	1,327
Dec 2006	858	279	882	1,396
Jun 2007	864	282	874	1,374
Dec 2007	856	292	907	1,399
Jun 2008	863	296	902	1,395

For data through December 2004, only those providers with at least 250 lines per state were required to file. Some historical data have been revised.

¹ All other includes SDSL, traditional wireline, fiber, satellite, fixed and mobile wireless, and power line.

Chart 11
Historical Number of Reporting Providers of High-Speed Lines by Technology

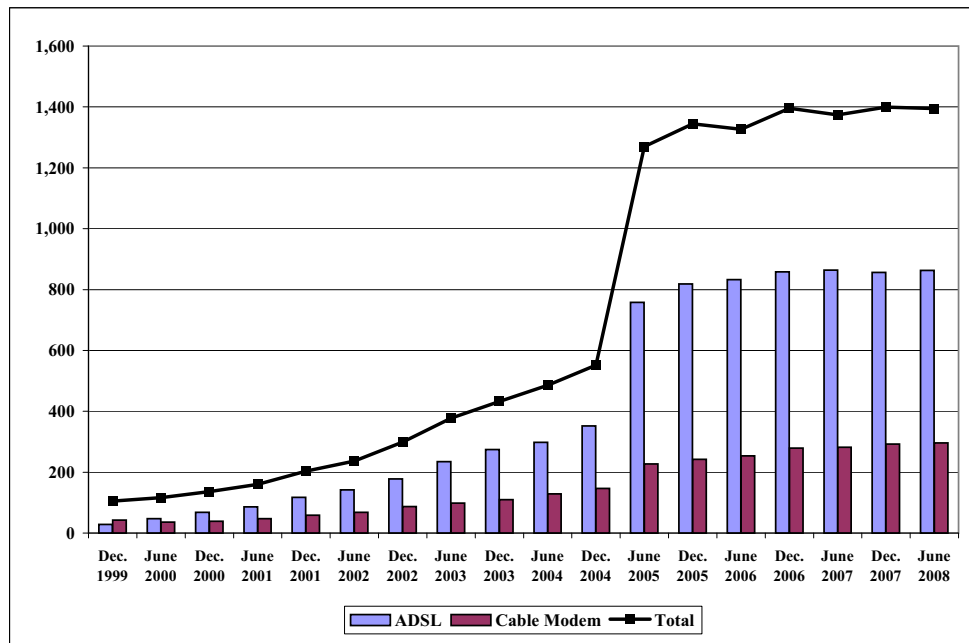


Table 8
Providers of High-Speed Lines by Technology as of June 30, 2008
(Over 200 kbps in at least one direction)

State	ADSL	SDSL	Traditional Wireline	Cable Modem	Fiber	Satellite	Fixed Wireless	Mobile Wireless	Power Line and Other	Total (Unduplicated)
Alabama	32	9	21	19	11	*	5	5	0	73
Alaska	9	6	5	*	*	*	6	*	0	18
American Samoa	*	*	0	0	0	0	*	0	0	*
Arizona	24	7	17	10	13	*	12	5	0	57
Arkansas	22	8	12	11	6	*	*	4	0	49
California	26	16	36	16	16	*	23	4	0	84
Colorado	30	12	21	13	13	*	22	8	0	73
Connecticut	8	8	14	7	8	*	0	*	0	31
Delaware	11	7	19	*	*	*	0	*	0	32
District of Columbia	12	8	18	*	6	*	*	*	0	30
Florida	28	17	42	16	22	*	13	5	*	82
Georgia	40	14	29	27	29	*	7	4	0	89
Guam	*	0	*	*	0	0	0	0	0	*
Hawaii	*	*	6	*	5	*	*	*	0	14
Idaho	24	9	14	7	14	*	16	5	0	53
Illinois	58	20	38	17	15	*	37	5	*	121
Indiana	41	13	29	13	21	*	27	*	*	88
Iowa	130	39	26	35	31	*	57	6	0	192
Kansas	38	15	18	26	19	*	25	4	0	86
Kentucky	31	10	17	19	11	*	12	5	0	75
Louisiana	22	9	20	10	10	*	5	5	0	53
Maine	14	10	11	5	8	*	0	*	0	30
Maryland	16	10	18	12	8	*	*	*	0	44
Massachusetts	16	10	22	6	7	*	4	*	0	43
Michigan	42	13	27	12	15	*	17	5	*	78
Minnesota	69	27	24	13	29	*	14	4	0	101
Mississippi	20	6	19	11	8	*	4	5	0	53
Missouri	44	19	21	18	13	*	26	5	*	92
Montana	18	8	10	4	7	*	11	4	0	38
Nebraska	34	14	11	16	6	*	22	4	0	68
Nevada	17	10	16	4	7	*	7	5	0	41
New Hampshire	15	8	15	6	7	*	*	*	0	37
New Jersey	20	14	34	8	10	*	*	*	0	51
New Mexico	23	7	11	7	6	*	8	5	0	44
New York	43	17	32	14	15	*	9	5	0	80
North Carolina	31	16	27	14	12	*	7	5	0	70
North Dakota	23	13	10	7	10	*	12	*	0	40
Northern Mariana Islands	*	0	*	*	*	0	*	0	0	*
Ohio	43	17	26	19	20	*	19	4	*	86
Oklahoma	39	8	22	10	9	*	17	5	0	77
Oregon	41	10	19	11	15	*	13	4	0	68
Pennsylvania	43	18	37	20	20	*	11	4	0	85
Puerto Rico	*	0	7	*	4	*	4	*	0	15
Rhode Island	10	7	13	*	5	*	0	*	0	25
South Carolina	24	9	19	16	11	*	*	5	0	47
South Dakota	24	9	10	7	11	*	11	*	0	44
Tennessee	29	13	21	13	12	*	7	6	0	72
Texas	66	24	37	25	27	*	50	7	0	137
Utah	16	11	14	4	8	*	10	6	0	44
Vermont	11	4	11	*	4	*	*	*	0	27
Virgin Islands	*	*	*	0	0	*	0	*	0	5
Virginia	27	12	30	13	15	*	12	4	*	68
Washington	30	10	25	16	20	*	21	6	*	77
West Virginia	13	4	11	7	*	*	*	*	0	32
Wisconsin	52	14	18	12	14	*	19	5	*	83
Wyoming	13	7	8	*	6	*	7	4	0	32
Nationwide	863	238	259	296	308	4	505	24	6	1,395

* Indicates one to three providers.

Table 9
High-Speed Lines by Technology as of June 30, 2008
(Over 200 kbps in at least one direction)

State	ADSL	SDSL	Traditional Wireline	Cable Modem	Fiber	Satellite	Fixed Wireless	Mobile Wireless	Power Line and Other	Total
Alabama	430,874	6,108	6,173	417,330	3,187	*	907	*	0	1,524,605
Alaska	72,032	*	493	*	*	*	10,638	*	0	182,545
American Samoa	*	*	0	0	0	0	*	0	0	*
Arizona	454,036	1,375	19,947	991,729	3,201	*	18,315	*	0	2,860,516
Arkansas	266,923	281	2,353	235,655	1,405	*	*	*	0	772,093
California	4,754,973	29,765	107,657	3,798,686	249,526	*	71,008	*	0	18,619,383
Colorado	574,903	2,298	20,163	626,069	3,191	*	30,345	*	0	2,344,512
Connecticut	*	2,936	4,856	575,644	2,642	*	0	*	0	2,002,300
Delaware	*	197	3,080	*	*	*	0	*	0	481,371
District of Columbia	*	1,836	4,010	*	1,276	*	*	*	0	471,514
Florida	2,045,146	7,156	53,096	2,631,022	217,217	*	41,033	*	*	8,157,096
Georgia	1,361,221	5,887	28,238	903,797	8,262	*	386	*	0	3,996,695
Guam	*	0	*	*	0	0	0	0	0	*
Hawaii	*	*	816	*	486	*	*	*	0	643,085
Idaho	153,697	294	1,962	126,634	1,133	*	50,692	*	0	690,599
Illinois	1,418,545	10,850	26,306	1,624,647	7,302	*	31,331	*	*	5,537,923
Indiana	651,097	3,535	9,741	455,929	48,639	*	12,475	*	*	2,479,608
Iowa	321,784	3,792	2,679	308,500	8,359	*	18,516	*	0	1,091,069
Kansas	240,921	4,982	5,906	380,063	5,065	*	16,856	*	0	1,063,920
Kentucky	384,920	4,974	4,873	481,916	3,421	*	3,371	*	0	1,298,038
Louisiana	353,678	1,240	4,760	480,720	19,227	*	2,601	*	0	1,552,888
Maine	120,357	4,038	4,334	196,848	3,368	*	0	*	0	428,904
Maryland	495,132	8,024	17,209	871,044	*	*	*	*	0	2,738,746
Massachusetts	*	5,445	16,700	1,158,976	*	*	1,082	*	0	3,392,831
Michigan	748,563	3,907	15,118	1,306,725	3,130	*	9,470	*	*	3,844,955
Minnesota	528,792	18,731	10,539	621,781	10,596	*	30,333	*	0	2,152,875
Mississippi	219,564	224	2,611	188,062	834	*	168	*	0	584,044
Missouri	712,189	3,978	11,638	517,207	4,154	*	8,835	*	*	2,076,382
Montana	108,083	3,276	931	90,467	701	*	10,107	*	0	476,845
Nebraska	143,036	3,976	1,053	262,073	639	*	14,927	*	0	702,180
Nevada	224,688	3,825	7,730	*	1,314	*	17,944	*	0	1,268,860
New Hampshire	96,781	2,097	4,869	250,233	16,058	*	*	*	0	681,535
New Jersey	699,670	4,250	24,169	1,586,469	*	*	*	*	0	5,338,219
New Mexico	217,072	278	2,402	137,463	1,104	*	3,360	*	0	719,761
New York	1,168,816	18,900	35,880	3,548,486	*	*	7,603	*	0	8,910,527
North Carolina	870,296	2,814	21,060	1,266,151	5,432	*	*	*	0	3,832,927
North Dakota	60,038	2,145	372	82,853	9,297	*	5,166	*	0	321,663
Northern Mariana Isl.	*	0	*	*	*	0	*	0	0	*
Ohio	1,034,335	4,302	17,632	1,626,534	8,951	*	24,317	*	*	5,066,325
Oklahoma	334,105	886	3,748	381,910	3,235	*	5,080	*	0	1,077,215
Oregon	360,993	9,889	5,656	554,284	*	*	28,160	*	0	1,716,959
Pennsylvania	1,208,597	15,479	23,147	1,491,572	*	*	5,134	*	0	5,682,008
Puerto Rico	*	0	4,421	*	313	*	4,860	*	0	582,155
Rhode Island	*	942	1,667	*	*	*	0	*	0	527,728
South Carolina	386,274	392	8,990	517,385	12,993	*	*	*	0	1,779,117
South Dakota	53,343	3,993	261	115,048	7,332	*	6,199	*	0	362,263
Tennessee	534,652	710	12,046	714,610	24,565	*	7,888	*	0	2,767,503
Texas	2,475,277	12,482	48,548	2,214,161	230,859	*	98,670	*	0	9,110,055
Utah	284,487	7,261	6,345	212,474	2,770	*	27,850	*	0	1,108,549
Vermont	72,581	*	2,348	*	416	*	*	*	0	257,065
Virgin Islands	*	*	*	0	0	*	0	*	0	19,441
Virginia	560,616	3,589	24,166	941,193	*	*	15,539	*	*	3,584,485
Washington	600,239	9,179	12,555	943,846	33,542	*	86,546	*	*	3,312,811
West Virginia	146,964	*	3,347	167,237	*	*	*	*	0	371,760
Wisconsin	556,171	15,062	6,093	711,209	4,193	*	12,285	*	*	1,931,916
Wyoming	55,265	1,769	300	*	501	*	3,870	*	0	288,052
Nationwide	29,963,968	274,582	665,110	38,190,355	2,346,328	869,450	808,375	59,690,619	5,197	132,813,984

* Data withheld to maintain firm confidentiality.

Table 10
High-Speed Lines by State
(Over 200 kbps in at least one direction)

State	2003	2004	2005		2006		2007		2008
	Jun	Jun	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Alabama	283,946	350,691	455,300	531,350	615,510	898,850	1,118,302	1,353,777	1,524,605
Alaska	61,121	88,076	95,761	109,484	125,005	145,008	156,187	171,257	182,545
American Samoa	0	*	*	*	*	*	*	*	*
Arizona	441,227	618,677	809,819	1,039,445	1,392,711	1,832,564	2,192,644	2,579,687	2,860,516
Arkansas	128,100	188,185	258,270	299,850	361,150	428,899	526,973	658,867	772,093
California	3,378,373	4,608,822	5,954,876	7,197,952	9,257,609	11,755,654	14,374,803	17,159,597	18,619,383
Colorado	338,083	515,081	688,189	882,669	1,165,853	1,489,091	1,827,962	2,270,584	2,344,512
Connecticut	364,371	516,039	679,891	803,274	1,018,755	1,257,276	1,554,448	1,834,752	2,002,300
Delaware	54,272	74,732	108,554	132,399	157,648	273,734	353,763	438,951	481,371
District of Columbia	58,800	83,213	113,086	139,594	200,221	268,008	337,897	420,305	471,514
Florida	1,634,552	2,236,963	2,958,350	3,537,720	4,408,427	5,346,321	6,349,093	7,416,288	8,157,096
Georgia	748,016	1,039,440	1,328,956	1,610,750	2,054,171	2,547,165	3,087,975	3,737,830	3,996,695
Guam	0	*	*	*	*	*	*	*	*
Hawaii	*	*	*	*	294,612	417,674	486,337	584,113	643,085
Idaho	64,353	99,845	149,023	167,926	202,521	381,283	483,049	613,317	690,599
Illinois	840,632	1,270,907	1,817,481	2,118,882	2,626,276	3,499,144	4,276,554	5,085,232	5,537,923
Indiana	233,679	515,812	742,667	913,528	1,182,578	1,408,019	1,823,221	2,267,190	2,479,608
Iowa	162,257	229,811	325,701	394,359	448,192	657,459	826,632	991,142	1,091,069
Kansas	248,405	322,742	419,384	468,032	596,776	726,742	876,744	989,832	1,063,920
Kentucky	121,594	300,704	408,184	508,198	629,538	774,736	959,771	1,161,750	1,298,038
Louisiana	315,682	420,917	536,934	508,009	730,203	892,835	1,088,803	1,286,504	1,552,888
Maine	85,212	123,739	176,396	214,599	248,440	306,006	359,113	396,271	428,904
Maryland	458,128	655,588	899,640	1,120,826	1,492,484	1,813,960	2,172,522	2,535,778	2,738,746
Massachusetts	802,423	1,004,229	1,213,640	1,431,925	1,811,845	2,243,742	2,660,501	3,140,550	3,392,831
Michigan	729,113	946,819	1,336,312	1,535,124	1,895,666	2,408,866	2,972,374	3,557,337	3,844,955
Minnesota	394,982	561,411	716,826	855,752	1,057,055	1,313,505	1,579,346	1,961,654	2,152,875
Mississippi	95,628	139,429	191,675	219,552	262,671	332,307	399,571	489,438	584,044
Missouri	362,040	537,343	704,273	805,525	1,010,910	1,269,326	1,561,172	1,866,033	2,076,382
Montana	28,023	57,650	90,583	112,662	139,946	264,121	346,230	432,877	476,845
Nebraska	141,172	199,282	253,968	305,120	355,013	470,118	537,693	633,722	702,180
Nevada	209,028	290,518	401,932	471,922	612,101	790,020	1,058,634	1,159,264	1,268,860
New Hampshire	118,304	168,000	236,817	268,128	302,957	443,207	539,686	637,977	681,535
New Jersey	924,835	1,194,557	1,605,301	1,989,803	2,654,674	3,392,607	4,153,343	4,923,622	5,338,219
New Mexico	71,355	115,147	174,534	204,054	252,361	422,964	544,706	662,246	719,761
New York	1,891,457	2,349,956	3,067,983	3,660,500	4,854,803	5,669,523	6,800,348	8,097,191	8,910,527
North Carolina	680,828	965,761	1,222,648	1,482,930	1,914,822	2,366,079	2,893,582	3,484,798	3,832,927
North Dakota	25,474	39,274	86,274	96,314	108,476	131,348	144,994	292,100	321,663
Northern Mariana Isl.	0	0	0	*	*	*	*	*	*
Ohio	817,020	1,152,300	1,601,981	1,909,661	2,439,297	3,179,003	3,947,240	4,612,350	5,066,325
Oklahoma	231,106	331,605	444,777	498,640	565,528	654,283	777,999	971,167	1,077,215
Oregon	316,300	437,040	558,489	688,487	860,385	1,060,386	1,285,947	1,566,919	1,716,959
Pennsylvania	755,947	1,123,876	1,578,981	1,999,118	2,646,898	3,374,313	4,121,608	5,148,887	5,682,008
Puerto Rico	32,063	43,091	66,484	118,268	169,917	251,163	332,671	471,560	582,155
Rhode Island	104,444	141,981	185,415	221,901	276,141	349,994	416,053	490,649	527,728
South Carolina	262,868	354,877	464,315	549,019	646,344	1,041,762	1,308,281	1,586,082	1,779,117
South Dakota	22,016	34,026	112,506	124,243	138,621	154,738	164,627	185,058	362,263
Tennessee	413,476	534,597	682,369	847,025	1,153,432	1,573,978	2,036,625	2,519,234	2,767,503
Texas	1,571,250	2,203,490	2,943,487	3,451,702	4,343,050	5,540,763	6,964,956	8,337,020	9,110,055
Utah	133,467	196,590	259,150	313,854	471,137	638,618	818,665	998,847	1,108,549
Vermont	39,773	56,033	82,279	95,901	108,622	170,245	193,151	240,257	257,065
Virgin Islands	*	*	2,183	2,967	7,226	11,139	16,014	18,996	19,441
Virginia	553,635	817,881	1,117,591	1,367,465	1,792,817	2,197,693	2,689,907	3,279,808	3,584,485
Washington	577,378	775,027	1,000,412	1,219,631	1,575,375	2,015,564	2,481,537	3,115,075	3,312,811
West Virginia	90,173	127,283	178,323	205,984	245,669	268,746	306,449	336,321	371,760
Wisconsin	401,565	564,670	731,934	844,961	1,018,482	1,235,500	1,485,891	1,766,448	1,931,916
Wyoming	17,507	35,464	55,905	70,574	83,086	156,940	205,711	260,310	288,052
Nationwide	22,995,444	31,950,574	42,517,810	50,930,245	64,991,653	82,525,450	100,986,136	121,222,347	132,813,984

* Data withheld to maintain firm confidentiality.
Some historical data have been revised back through December 2005.

Table 11
ADSL High-Speed Lines by State
(Over 200 kbps in at least one direction)

State	2003	2004	2005		2006		2007		2008
	Jun	Jun	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Alabama	70,639	112,059	177,196	220,657	268,970	314,640	356,830	402,603	430,874
Alaska	14,013	20,686	38,530	43,249	53,687	60,055	63,708	67,938	72,032
American Samoa	0	0	*	*	*	*	*	*	*
Arizona	77,368	108,735	152,937	207,727	276,261	365,228	405,724	436,857	454,036
Arkansas	44,801	80,981	127,445	149,878	180,883	200,129	226,842	248,908	266,923
California	1,715,998	2,342,186	3,078,824	3,592,220	4,001,529	4,342,556	4,626,442	4,780,051	4,754,973
Colorado	126,189	201,523	268,114	333,313	404,989	473,148	529,504	573,387	574,903
Connecticut	124,742	204,034	*	*	*	*	*	*	*
Delaware	*	10,572	*	*	*	*	*	*	*
District of Columbia	39,471	44,231	*	*	*	*	*	*	*
Florida	644,621	928,402	1,284,507	1,509,104	1,722,888	1,873,271	1,960,025	2,046,084	2,045,146
Georgia	368,372	535,088	757,720	890,128	1,008,705	1,126,082	1,218,885	1,307,237	1,361,221
Guam	0	*	*	*	*	*	*	*	*
Hawaii	*	*	*	*	*	*	*	*	*
Idaho	19,382	35,166	62,691	81,520	97,662	113,001	129,188	142,440	153,697
Illinois	363,733	588,906	847,522	979,709	1,094,088	1,211,763	1,300,003	1,382,195	1,418,545
Indiana	85,968	179,942	304,800	379,465	443,473	515,054	583,797	635,507	651,097
Iowa	39,386	65,580	118,777	150,890	189,178	233,396	270,637	298,322	321,784
Kansas	50,839	88,246	136,402	159,996	179,430	202,751	224,843	235,919	240,921
Kentucky	75,316	119,709	180,324	213,131	250,715	303,296	340,350	367,452	384,920
Louisiana	100,919	136,406	190,603	207,488	235,750	270,811	306,283	333,076	353,678
Maine	11,052	31,577	52,032	72,709	89,964	104,780	115,261	117,570	120,357
Maryland	126,873	192,139	305,677	379,316	450,019	489,553	512,156	513,529	495,132
Massachusetts	207,344	253,576	*	*	*	*	*	*	*
Michigan	135,360	236,310	374,861	463,373	533,835	606,616	689,536	732,950	748,563
Minnesota	115,244	159,137	227,988	276,439	330,736	394,686	449,452	496,317	528,792
Mississippi	33,650	52,892	88,252	105,874	128,585	154,179	180,281	202,262	219,564
Missouri	138,046	233,916	341,618	398,671	468,334	545,679	618,302	682,572	712,189
Montana	13,119	28,238	46,786	57,300	70,471	82,876	95,790	102,231	108,083
Nebraska	18,285	35,180	66,268	81,188	95,404	112,032	124,126	135,305	143,036
Nevada	47,934	74,879	116,395	139,938	168,086	190,202	207,051	220,409	224,688
New Hampshire	17,823	31,843	54,233	71,689	85,247	93,589	98,283	99,602	96,781
New Jersey	211,540	301,789	443,808	540,382	638,293	703,950	734,700	734,903	699,670
New Mexico	26,948	51,375	82,062	105,210	130,998	156,620	179,856	200,497	217,072
New York	438,241	536,980	736,769	861,452	1,002,972	1,103,960	1,181,851	1,184,011	1,168,816
North Carolina	161,642	264,248	412,991	488,533	561,102	648,001	724,936	820,334	870,296
North Dakota	11,593	19,412	26,841	32,000	38,729	46,346	51,096	55,635	60,038
Northern Mariana Isl.	0	0	0	*	*	*	*	*	*
Ohio	243,689	369,386	555,749	663,011	752,633	858,846	950,969	1,024,412	1,034,335
Oklahoma	78,248	129,996	189,496	222,048	246,899	277,282	301,523	323,685	334,105
Oregon	95,654	142,483	197,927	244,694	280,286	311,604	338,765	355,563	360,993
Pennsylvania	230,322	346,720	541,274	692,079	871,164	1,012,845	1,125,794	1,191,348	1,208,597
Puerto Rico	*	*	*	*	*	*	*	*	*
Rhode Island	*	*	*	*	*	*	*	*	*
South Carolina	52,667	98,583	154,666	205,529	242,548	284,892	322,858	359,439	386,274
South Dakota	8,637	15,230	20,632	26,168	32,763	39,684	45,772	48,386	53,343
Tennessee	92,777	147,922	237,180	293,915	348,344	396,928	446,551	499,164	534,652
Texas	597,447	930,997	1,300,681	1,513,639	1,732,716	1,996,752	2,293,905	2,463,911	2,475,277
Utah	65,648	95,656	129,607	160,313	189,240	222,307	249,683	269,785	284,487
Vermont	15,072	22,519	35,281	43,934	51,382	61,441	68,041	72,006	72,581
Virgin Islands	*	*	*	*	*	*	*	*	*
Virginia	114,797	196,568	308,947	384,243	446,448	505,285	547,941	568,284	560,616
Washington	225,377	300,804	363,796	427,451	491,409	533,668	569,397	592,133	600,239
West Virginia	*	*	53,292	69,390	86,507	104,637	123,645	137,948	146,964
Wisconsin	84,100	159,167	243,370	298,111	359,530	417,510	483,750	528,196	556,171
Wyoming	5,503	13,510	23,769	33,030	38,541	44,347	49,933	52,602	55,265
Nationwide	7,675,114	11,398,199	16,316,309	19,515,483	22,583,548	25,412,509	27,792,800	29,449,166	29,963,968

* Data withheld to maintain firm confidentiality.

Some historical data have been revised back through June 2006.

Table 12
Coaxial Cable High-Speed Lines by State
(Over 200 kbps in at least one direction)

State	2003	2004	2005		2006		2007		2008
	Jun	Jun	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Alabama	181,338	206,208	257,225	285,177	310,548	342,340	374,029	398,840	417,330
Alaska	*	*	*	*	*	*	*	*	*
American Samoa	0	0	0	0	0	0	0	0	0
Arizona	319,272	457,869	583,897	679,284	761,419	838,455	850,307	896,746	991,729
Arkansas	*	95,528	117,953	137,105	148,940	183,503	205,349	214,028	235,655
California	1,395,435	1,929,080	2,467,232	2,734,659	2,956,932	3,155,718	3,410,983	3,603,105	3,798,686
Colorado	181,766	280,909	383,154	433,184	476,463	523,159	560,557	604,247	626,069
Connecticut	227,658	299,176	372,346	403,723	441,092	454,348	513,211	550,019	575,644
Delaware	*	*	*	*	*	*	*	*	*
District of Columbia	*	*	*	*	*	*	*	*	*
Florida	867,513	1,171,641	1,559,592	1,757,875	1,939,409	2,178,484	2,344,445	2,543,384	2,631,022
Georgia	289,922	407,038	522,800	583,884	649,583	742,552	802,047	862,212	903,797
Guam	0	0	0	0	0	0	0	*	*
Hawaii	*	*	*	*	*	*	*	*	*
Idaho	*	*	78,185	73,528	75,185	108,595	116,273	123,067	126,634
Illinois	383,069	589,025	841,737	955,518	1,042,272	1,332,023	1,465,869	1,570,281	1,624,647
Indiana	122,338	304,866	397,481	445,420	490,020	370,200	410,438	439,417	455,929
Iowa	111,748	151,299	186,821	219,803	225,190	234,266	267,712	287,011	308,500
Kansas	181,437	209,233	258,856	272,660	316,866	320,638	351,371	368,988	380,063
Kentucky	23,672	154,567	217,302	269,274	306,487	333,339	383,593	434,900	481,916
Louisiana	189,920	257,405	328,675	254,819	378,613	419,735	446,485	485,349	480,720
Maine	*	*	116,203	132,075	145,831	152,291	169,458	179,398	196,848
Maryland	306,442	433,754	546,576	592,283	637,405	781,120	829,473	864,763	871,044
Massachusetts	564,961	704,956	826,351	885,578	954,812	1,044,333	1,088,170	1,135,807	1,158,976
Michigan	543,336	656,263	891,842	953,786	1,019,338	1,103,040	1,197,105	1,265,384	1,306,725
Minnesota	255,988	358,477	440,726	493,783	517,018	541,116	570,874	607,772	621,781
Mississippi	50,234	72,271	95,805	104,363	114,140	135,965	151,539	166,092	188,062
Missouri	191,658	266,493	323,270	353,331	400,808	444,118	473,449	497,878	517,207
Montana	*	22,856	35,625	45,442	54,056	65,238	74,246	83,006	90,467
Nebraska	111,903	142,555	177,074	200,600	218,335	239,465	238,019	251,699	262,073
Nevada	*	*	*	*	*	*	*	*	*
New Hampshire	95,612	129,024	176,033	188,212	201,873	209,781	229,855	239,605	250,233
New Jersey	690,620	862,834	1,107,751	1,205,182	1,312,433	1,385,953	1,473,709	1,538,490	1,586,469
New Mexico	38,004	56,369	78,035	89,003	100,157	108,906	117,336	126,692	137,463
New York	1,401,322	1,752,189	2,216,153	2,444,565	2,765,476	2,967,028	3,164,178	3,341,913	3,548,486
North Carolina	454,272	623,414	762,203	861,990	963,651	1,040,513	1,134,075	1,195,757	1,266,151
North Dakota	10,066	14,428	50,781	54,772	57,722	70,878	76,353	79,755	82,853
Northern Mariana Isl.	0	0	0	0	0	0	0	*	*
Ohio	508,458	709,145	961,119	1,064,948	1,184,924	1,303,470	1,405,899	1,498,317	1,626,534
Oklahoma	*	*	233,993	261,585	284,184	312,500	347,813	372,867	381,910
Oregon	197,794	262,513	335,847	375,351	407,195	452,517	489,902	531,258	554,284
Pennsylvania	482,471	724,101	962,149	1,074,912	1,164,080	1,255,720	1,271,157	1,398,950	1,491,572
Puerto Rico	*	*	*	*	*	*	*	*	*
Rhode Island	*	*	*	*	*	*	*	*	*
South Carolina	185,083	228,648	290,233	326,370	368,338	417,584	459,110	496,188	517,385
South Dakota	9,156	12,114	83,667	88,812	92,860	100,155	100,903	111,009	115,048
Tennessee	277,579	340,883	422,063	460,235	506,143	601,889	662,520	702,891	714,610
Texas	888,595	1,162,797	1,467,804	1,617,513	1,692,433	1,944,069	2,081,963	2,183,062	2,214,161
Utah	*	*	*	*	*	*	*	*	212,474
Vermont	*	*	*	*	*	*	*	*	*
Virgin Islands	0	0	0	0	0	0	0	0	0
Virginia	404,616	579,580	748,694	817,100	892,955	877,235	906,252	921,438	941,193
Washington	313,915	426,487	585,125	660,159	725,832	806,126	862,049	909,108	943,846
West Virginia	73,263	97,463	117,538	128,133	145,450	144,569	155,867	158,921	167,237
Wisconsin	287,519	371,106	446,840	497,262	542,881	591,981	636,675	675,737	711,209
Wyoming	*	*	*	*	*	*	*	*	*
Nationwide	13,684,225	18,592,636	24,017,442	26,558,206	29,173,449	31,981,705	34,404,368	36,506,972	38,190,355

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

Table 13
High-Speed Lines by Type of End User as of June 30, 2008
(Over 200 kbps in at least one direction)

State	Residential	Business	Total
Alabama	909,945	614,660	1,524,605
Alaska	156,793	25,752	182,545
American Samoa	*	*	*
Arizona	1,575,252	1,285,264	2,860,516
Arkansas	612,182	159,911	772,093
California	10,406,479	8,212,904	18,619,383
Colorado	1,315,361	1,029,151	2,344,512
Connecticut	1,135,798	866,502	2,002,300
Delaware	240,153	241,218	481,371
District of Columbia	191,505	280,009	471,514
Florida	5,425,497	2,731,599	8,157,096
Georgia	2,402,283	1,594,412	3,996,695
Guam	*	*	*
Hawaii	378,477	264,608	643,085
Idaho	343,184	347,415	690,599
Illinois	3,471,815	2,066,108	5,537,923
Indiana	1,274,862	1,204,746	2,479,608
Iowa	632,294	458,775	1,091,069
Kansas	721,808	342,112	1,063,920
Kentucky	932,158	365,880	1,298,038
Louisiana	1,111,304	441,584	1,552,888
Maine	309,458	119,446	428,904
Maryland	1,767,213	971,533	2,738,746
Massachusetts	1,946,046	1,446,785	3,392,831
Michigan	2,262,822	1,582,133	3,844,955
Minnesota	1,288,882	863,993	2,152,875
Mississippi	435,193	148,851	584,044
Missouri	1,496,075	580,307	2,076,382
Montana	198,534	278,311	476,845
Nebraska	431,124	271,056	702,180
Nevada	780,141	488,719	1,268,860
New Hampshire	363,328	318,207	681,535
New Jersey	2,716,982	2,621,237	5,338,219
New Mexico	374,043	345,718	719,761
New York	5,470,914	3,439,613	8,910,527
North Carolina	2,280,220	1,552,707	3,832,927
North Dakota	145,593	176,070	321,663
Northern Mariana Islands	*	*	*
Ohio	2,838,688	2,227,637	5,066,325
Oklahoma	880,666	196,549	1,077,215
Oregon	1,081,837	635,122	1,716,959
Pennsylvania	3,097,119	2,584,889	5,682,008
Puerto Rico	501,072	81,083	582,155
Rhode Island	297,643	230,085	527,728
South Carolina	942,688	836,429	1,779,117
South Dakota	170,380	191,883	362,263
Tennessee	1,346,820	1,420,683	2,767,503
Texas	6,198,779	2,911,276	9,110,055
Utah	552,567	555,982	1,108,549
Vermont	136,780	120,285	257,065
Virgin Islands	17,576	1,865	19,441
Virginia	1,900,624	1,683,861	3,584,485
Washington	1,783,539	1,529,272	3,312,811
West Virginia	314,072	57,688	371,760
Wisconsin	1,384,836	547,080	1,931,916
Wyoming	116,661	171,391	288,052
Nationwide	79,089,575	53,724,409	132,813,984

* Data withheld to maintain firm confidentiality.

Table 14
Percentage of Residential End-User Premises with Access to High-Speed Services as of June 30, 2008

State	xDSL Availability Where ILECs Offer Local Telephone Service	Cable Modem Availability Where Cable Systems Offer Cable TV Service
Alabama	77%	93%
Alaska	75%	*
American Samoa	*	0%
Arizona	84%	99%
Arkansas	77%	74%
California	89%	99%
Colorado	89%	96%
Connecticut	*	100%
Delaware	*	*
District of Columbia	*	*
Florida	89%	98%
Georgia	93%	90%
Guam	*	*
Hawaii	*	*
Idaho	80%	99%
Illinois	85%	97%
Indiana	81%	91%
Iowa	86%	90%
Kansas	83%	91%
Kentucky	88%	89%
Louisiana	83%	97%
Maine	71%	93%
Maryland	75%	98%
Massachusetts	*	100%
Michigan	73%	99%
Minnesota	86%	96%
Mississippi	76%	92%
Missouri	80%	97%
Montana	78%	88%
Nebraska	86%	93%
Nevada	87%	*
New Hampshire	62%	99%
New Jersey	86%	100%
New Mexico	85%	79%
New York	79%	99%
North Carolina	85%	95%
North Dakota	89%	82%
Northern Mariana Isl.	*	*
Ohio	85%	98%
Oklahoma	80%	92%
Oregon	83%	95%
Pennsylvania	84%	94%
Puerto Rico	*	*
Rhode Island	*	*
South Carolina	84%	93%
South Dakota	80%	81%
Tennessee	83%	96%
Texas	80%	96%
Utah	89%	88%
Vermont	71%	*
Virgin Islands	*	0%
Virginia	65%	97%
Washington	83%	98%
West Virginia	69%	85%
Wisconsin	82%	96%
Wyoming	81%	*
Nationwide	83%	96%

* Data withheld to maintain firm confidentiality.

xDSL includes both asymmetric and symmetric DSL. Each state-specific estimate is a weighted average of the availability percentages that ILECs or cable system operators report for the areas they serve. Reported xDSL availability is weighted by ILEC end-user switched access lines. Reported cable modem availability is weighted by cable TV subscribers. The weighted averages include ILECs or cable system operators that report no availability.

Table 15
Percentage of Zip Codes with High-Speed Lines in Service

Number of Providers	2001		2002		2003		2004		2005		2006		2007		2008
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Zero	22.2 %	20.6 %	16.1 %	12.0 %	9.0 %	6.8 %	5.7 %	4.6 %	2.0 %	1.0 %	0.7 %	0.4 %	0.1 %	0.2 %	0.0 %
One	20.3	19.3	18.4	17.3	16.4	14.9	13.8	12.5	9.3	5.6	3.7	2.4	0.9	1.3	0.3
Two	16.7	15.7	16.2	16.8	16.9	17.1	16.8	16.3	14.1	11.9	8.2	5.7	3.6	3.8	1.5
Three	13.2	13.1	13.3	14.4	14.0	14.9	14.9	15.1	15.0	14.8	11.3	8.9	7.0	6.7	3.7
Four	8.2	9.1	9.6	10.3	10.6	11.2	11.6	12.2	12.6	13.5	12.9	11.4	11.1	10.3	7.2
Five	4.9	6.1	6.9	7.3	7.7	7.8	8.4	8.9	9.7	10.3	12.2	12.5	13.6	12.8	10.8
Six	3.6	4.2	4.6	5.0	5.3	5.8	6.1	6.3	6.8	7.8	10.4	11.7	13.0	13.4	13.4
Seven	2.8	3.2	3.2	3.9	4.0	4.2	4.4	4.6	5.3	5.7	8.7	10.0	11.6	11.2	12.7
Eight	2.2	2.5	2.8	2.7	3.1	3.3	3.6	3.6	4.0	4.6	7.1	8.3	9.1	9.0	9.9
Nine	1.9	2.0	2.4	2.2	2.5	2.6	2.8	3.1	3.8	4.0	5.8	6.7	7.4	7.4	7.4
Ten or More	3.9	4.0	6.4	8.0	10.5	11.4	11.8	12.8	17.5	20.7	19.1	22.0	22.7	23.8	33.2

For data through December 2004, only those providers with at least 250 lines per state were required to file. Figures may not add up to 100% due to rounding.

Chart 12
Percent of Zip Codes with High-Speed Providers

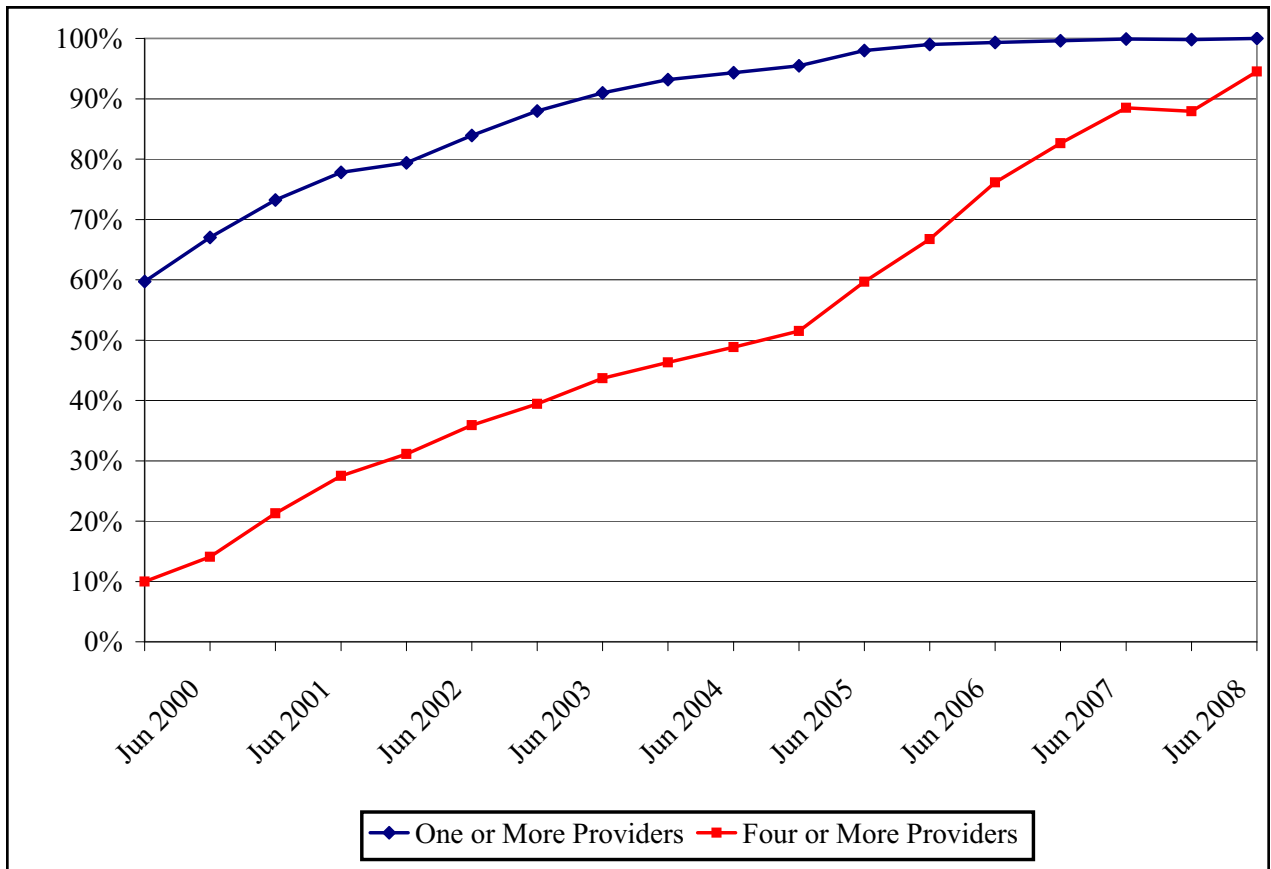


Table 16
Percentage of Zip Codes with High-Speed Lines in Service by Technology as of June 30, 2008

Technology	Number of Providers										
	Zero	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten or More
ADSL	12.8	38.0	20.8	10.9	6.8	5.0	2.7	1.7	0.8	0.3	0.2
SDSL	61.3	20.0	7.3	5.1	3.5	1.7	0.7	0.2	0.1	0.0	0.0
Cable Modem	32.8	57.1	9.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fiber	62.3	19.5	10.3	5.1	1.9	0.6	0.2	0.0	0.0	0.0	0.0
Satellite	6.5	20.8	53.6	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fixed Wireless	71.8	21.1	5.6	1.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Mobile Wireless	0.6	6.0	34.1	47.3	11.4	0.5	0.0	0.0	0.0	0.0	0.0
Power Line and/or Other ¹	43.2	17.6	9.4	6.3	5.0	4.3	3.7	2.9	2.7	1.8	3.2
ADSL and/or Cable Modem	8.6	23.3	22.3	16.2	10.4	7.2	5.2	3.4	1.9	1.0	0.7
All Technologies	0.0	0.3	1.5	3.7	7.2	10.8	13.4	12.7	9.9	7.4	33.2

Figures may not add up to 100% due to rounding.

¹ Other includes high-speed lines provided over traditional wireline facilities such as T-carrier and also lines provided over any technology that is not specified in the table.

High-Speed Providers by 5-Digit Geographical ZIP Code (As of June 30, 2008)

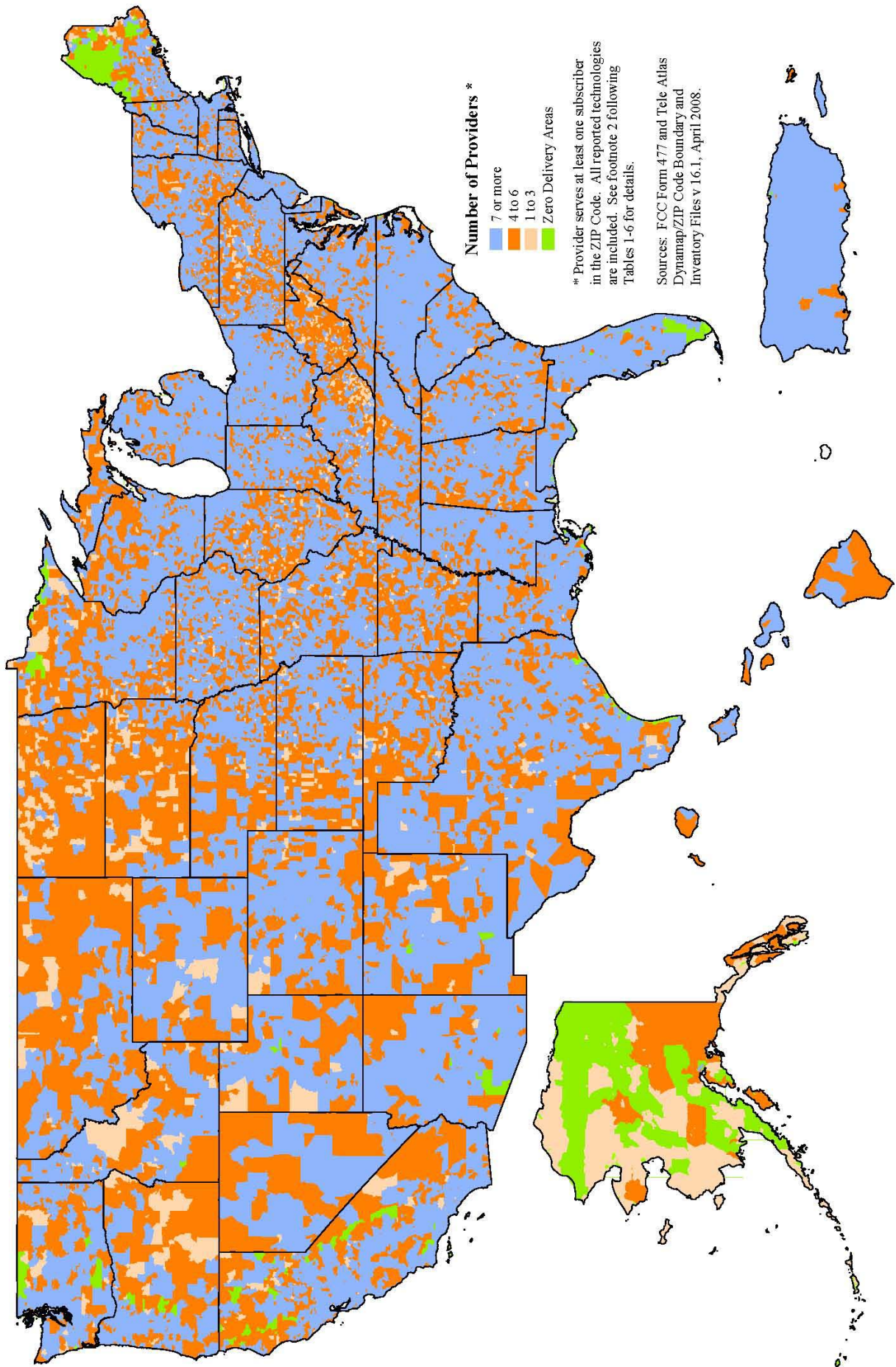


Table 17
Percentage of Zip Codes with High-Speed Lines in Service as of June 30, 2008
(Over 200 kbps in at least one direction)

	Number of Providers										
	Zero	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten or More
Alabama	0 %	0 %	1 %	2 %	3 %	8 %	17 %	16 %	15 %	8 %	30 %
Alaska	0	12	37	21	17	4	3	0	3	1	0
Arizona	0	0	0	1	2	6	8	10	8	7	57
Arkansas	0	0	2	7	11	15	27	16	8	5	9
California	0	0	0	2	4	8	10	9	6	6	54
Colorado	0	0	1	2	5	5	13	12	8	6	48
Connecticut	0	0	0	0	7	10	15	14	12	11	30
Delaware	0	0	0	5	2	5	16	5	10	3	53
District of Columbia	0	0	0	4	4	0	0	4	0	0	88
Florida	0	0	0	0	1	2	4	8	7	8	70
Georgia	0	0	0	2	3	8	14	13	11	8	41
Hawaii	0	0	0	3	6	14	18	16	8	14	21
Idaho	0	0	3	9	7	12	14	17	12	5	22
Illinois	0	0	2	3	8	13	16	11	9	6	32
Indiana	0	0	1	4	8	12	14	13	13	8	27
Iowa	0	0	2	5	10	12	16	14	12	8	22
Kansas	0	0	2	5	10	13	12	12	10	9	26
Kentucky	0	2	8	11	12	14	13	11	8	6	14
Louisiana	0	0	0	2	3	7	16	21	12	9	31
Maine	0	1	4	8	11	15	18	16	13	3	11
Maryland	0	0	1	3	7	12	12	12	6	6	42
Massachusetts	0	0	0	1	2	9	13	13	9	10	43
Michigan	0	0	0	1	3	7	11	15	14	10	39
Minnesota	0	0	2	5	12	14	13	13	10	6	26
Mississippi	0	0	0	2	1	10	16	17	14	8	32
Missouri	0	0	2	5	10	13	16	15	9	5	24
Montana	0	0	0	7	19	25	17	10	6	4	11
Nebraska	0	0	0	4	10	15	17	16	15	8	15
Nevada	0	0	1	1	7	7	11	11	9	7	46
New Hampshire	0	0	0	0	3	5	11	18	21	12	30
New Jersey	0	0	0	0	1	4	3	6	6	8	73
New Mexico	0	0	2	2	9	16	19	17	10	4	21
New York	0	0	1	3	5	13	14	11	10	8	36
North Carolina	0	0	0	1	2	4	10	16	17	11	38
North Dakota	0	0	2	17	28	25	15	5	3	1	3
Ohio	0	0	0	0	1	4	10	16	15	11	42
Oklahoma	0	0	2	3	10	19	18	11	7	6	23
Oregon	0	0	2	5	10	14	14	9	8	7	31
Pennsylvania	0	1	3	6	11	13	13	12	6	5	31
Puerto Rico	0	0	0	0	1	2	6	18	29	17	27
Rhode Island	0	0	1	3	5	9	12	15	7	5	42
South Carolina	0	0	0	1	3	5	13	15	9	9	45
South Dakota	0	0	3	16	23	20	14	9	7	3	6
Tennessee	0	0	1	2	5	11	16	14	9	7	35
Texas	0	0	1	2	4	8	11	11	10	10	42
Utah	0	0	0	4	6	8	18	10	10	6	38
Vermont	0	0	0	1	6	12	13	20	11	13	23
Virginia	0	0	1	2	8	11	16	15	10	7	29
Washington	0	0	0	4	5	12	11	10	9	6	44
West Virginia	0	1	6	12	22	22	16	8	3	3	7
Wisconsin	0	0	1	1	4	10	21	19	12	9	22
Wyoming	0	0	1	7	14	18	19	14	7	7	11
Nationwide	0 %	0 %	2 %	4 %	7 %	11 %	13 %	13 %	10 %	7 %	33 %

Table 18
High-Speed Subscribership
Ranked by Population Density

Persons per Square Mile ¹	Percentage of Zip Codes with at Least One High-Speed Subscriber												Percentage of Population that Resides in Zip Codes with High-Speed Service										
	Jun 2005		Dec 2005		Jun 2006		Dec 2006		Jun 2007		Dec 2007		Jun 2008		Dec 2008		Jun 2007		Dec 2007		Jun 2008		
More than 3,190	99.3 %	99.5 %	99.7 %	99.9 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
975 - 3,190	99.8	99.7	99.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
278 - 975	99.4	99.7	99.7	99.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
118 - 278	99.5	99.7	99.6	99.8	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7
66 - 118	99.4	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7
41 - 66	99.1	99.3	99.6	99.5	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
25 - 41	97.7	98.8	99.3	99.4	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
15 - 25	97.5	98.1	98.7	99.4	99.4	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
6 - 15	95.8	97.9	98.6	99.2	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Fewer than 6	92.2	96.9	98.2	99.0	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8

Table 19
High-Speed Subscribership
Ranked by Household Income

Median Household Income ¹	Percentage of Zip Codes with at Least One High-Speed Subscriber												Percentage of Population that Resides in Zip Codes with High-Speed Service										
	Jun 2005		Dec 2005		Jun 2006		Dec 2006		Jun 2007		Dec 2007		Jun 2008		Dec 2008		Jun 2007		Dec 2007		Jun 2008		
More than \$61,200	99.6 %	99.8 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
\$50,331 - \$61,200	99.7	99.6	99.9	99.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
\$44,439 - \$50,331	99.3	99.4	99.7	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
\$40,334 - \$44,439	98.8	99.2	99.6	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
\$37,281 - \$40,334	98.2	99.1	99.3	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6	99.6
\$34,633 - \$37,281	98.4	99.2	99.5	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7
\$32,125 - \$34,633	97.4	98.9	99.3	99.6	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
\$29,616 - \$32,125	97.1	98.6	98.9	99.2	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
\$26,113 - \$29,616	96.4	98.2	98.8	99.5	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Less than \$26,113	94.9	97.1	98.1	98.6	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7

Historical data have been revised back through June 2005.
¹ Persons per square mile and median household income are presented in decile groups where each group contains 10% of the geographic Zip Codes. Because Zip Codes are being updated constantly, the decile break points vary slightly over time. The break points shown are typical. These data are created by geographically merging contemporaneous Tele Atlas® Dynamap® ZIP Code Boundary & Inventory Files with census block-level population and census block group-level income data from the 2000 Census of Population and Housing.

Customer Response

Publication: *High-Speed Services for Internet Access: Status as of June 30, 2008*

You can help us provide the best possible information to the public by completing this form and returning it to the Industry Analysis and Technology Division of the FCC's Wireline Competition Bureau.

1. Please check the category that best describes you:

- press
- current telecommunications carrier
- potential telecommunications carrier
- business customer evaluating vendors/service options
- consultant, law firm, lobbyist
- other business customer
- academic/student
- residential customer
- FCC employee
- other federal government employee
- state or local government employee
- Other (please specify)

2. Please rate the report:

	Excellent	Good	Satisfactory	Poor	No opinion
Data accuracy	()	()	()	()	()
Data presentation	()	()	()	()	()
Timeliness of data	()	()	()	()	()
Completeness of data	()	()	()	()	()
Text clarity	()	()	()	()	()
Completeness of text	()	()	()	()	()

3. Overall, how do you rate this report?

	Excellent	Good	Satisfactory	Poor	No opinion
	()	()	()	()	()

4. How can this report be improved?

5. May we contact you to discuss possible improvements?

Name:

Telephone #:

To discuss the information in this report, contact: 202-418-0940 or for users of TTY equipment, call 202-418-0484		
Fax this response to	or	Mail this response to
202-418-0520		FCC/WCB/IATD Mail Stop 1600 F Washington, DC 20554

**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. 09-137; A National Broadband Plan for Our Future, GN Docket No. 09-51.

Ensuring that universal broadband improves the lives of all Americans is an urgent task. Today's item opening a Section 706 inquiry into broadband deployment is another step in the ongoing, agency-wide drive toward developing a National Broadband Plan by February 2010. The Commission is hard at work ensuring that the agency possesses the data needed to make wise policy decisions.

**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. 09-137; *A National Broadband Plan for Our Future*, GN Docket No. 09-51.

I am thrilled to see a Notice of Inquiry for the 706 Report that has real meaning—that is thoughtful, forward-looking, and a complement to the process this Commission has underway to develop a national broadband plan. During every 706 Report process since I have been at the Commission, I have stressed that we needed to recognize this problem, diagnose it, and then come up with a solution to reverse our nation’s slide into technological and communications mediocrity. On many occasions, I talked about how the country lacked a national strategy; how we lacked even the essential data on which to build a viable strategy; and how we were paying a terrible price because of a cavalier approach to an urgent national problem. Happily, times have changed and we now have the commitment and the leadership to tackle these issues. The Commission kicked off its massive broadband effort with the *National Broadband Plan Notice of Inquiry*, and with this Section 706 Notice we will start a new annual tradition—a true review of the state of broadband deployment in America.

**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. 09-137; A National Broadband Plan for Our Future, GN Docket No. 09-51.

This nation has made great strides in developing and deploying broadband infrastructure and services since the Commission issued the first Section 706 Report in 1999. Today, a wide variety of innovative services are provided to consumers over copper, cable, fiber, wireless and satellite infrastructure that simply did not exist a decade ago. While we should always strive to do better, we should also learn from what America has achieved in the broadband market thus far.

We must take great care to seek accurate and complete information that is useful to assess the state of broadband deployment. This item, which I support, reflects the benefits of the additional guidance Congress has given the Commission. Our resulting assessment should be improved by that guidance, our concurrent efforts in the National Broadband Plan proceeding, and the availability of more granular and expansive Form 477 data.