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Federal Communications Commission
Washington, D.C. 20554

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- In the Matter of
Modernizing the FCC Form 477 Data Program
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
Service Quality, Customer Satisfaction, Infrastructure and Operating Data Gathering
Review of Wireline Competition Bureau Data Practices

NOTICE OF PROPOSED RULEMAKING

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I. INTRODUCTION

1. In this Notice of Proposed Rulemaking (NPRM), we seek comment on whether and how to reform the Form 477 data program to improve the Commission's ability to carry out its statutory duties, while streamlining and minimizing the overall costs of the program, including the burdens imposed on service providers. This NPRM is an important part of our larger Data Innovation Initiative to modernize and streamline how we collect, use, and disseminate data, and to ensure that all of the data we collect is useful for supporting informed policymaking, promoting competition, and protecting consumers. We are focused on giving careful consideration to the benefits and burdens of our data collections, and eliminating unnecessary collections where possible. For example, the Initiative already has identified over twenty data collections across the entire Commission that may be outdated and ripe for elimination, as well as a number of statutory reporting obligations that may have outlived their usefulness.¹ Similarly, for each type of data

¹ *Pleading Cycle Established for Comments on Review of Media Bureau Data Practices*, MB Docket No. 10-103, Public Notice, 25 FCC Rcd 8236 (MB 2010); *Pleading Cycle Established for Comments on Review of Wireless Competition Bureau Data Practices*, WT Docket No. 10-131, Public Notice, 25 FCC Rcd 8373 (WTB 2010); *Pleading Cycle Established for Comments on Review of Wireline Competition Bureau Data Practices*, WC Docket No. 10-132, Public Notice, 25 FCC Rcd 8213 (WCB 2010). Commission action on the collections identified through the Initiative will occur in the dockets associated with those collections. For example, the Commission today issued a Notice of Proposed Rulemaking in which it proposes removal of the narrowband comparably efficient interconnection (CEI) and open network architecture (ONA) requirements that currently apply to the Bell Operating Companies (BOCs). See *Review of Wireline Competition Bureau Data Practices; Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review—Review of Computer III and ONA Safeguards and Requirements*, WC Docket No. 10-132, CC Docket Nos. 95-20, 98-10, Notice of Proposed Rulemaking, FCC No. 11-15 (rel. Feb. 8, 2011). The Commission also may take action through its biennial review of telecommunications regulations. See 47 U.S.C. § 161; *Commission Seeks Public Comment in 2010 Biennial Review of Telecommunications Regulations; Announces Particular Focus on Data Collection Requirements*, CG Docket No. 10-266, EB Docket No. 10-267, IB Docket No. 10-268, ET Docket No. 10-269, PS Docket No. 10-270, WT Docket No. 10-271, WC Docket No. 10-272, Public Notice, FCC 10-204 (rel. Dec. 30, 2010) (2010 Biennial Review Public Notice).

discussed in this Notice, we will consider the burdens and benefits of any proposed changes. Our goal is to ensure that the Commission has the data it needs, while minimizing the overall burdens of data collection.

2. Established in 2000, Form 477 is the Commission's primary tool for collecting data about broadband and local telephone networks and services.² The form requires providers of broadband service, local telephone service, interconnected Voice over Internet Protocol (VoIP) service, and mobile telephone service to report the number of subscribers they have in their respective service areas.³ But the Commission has in the past noted shortcomings of the data collected using Form 477,⁴ and after more than a decade of rapid innovation in the market for broadband and telephone services, and consistent with the Government Accountability Office's (GAO) recent finding that the Commission's broadband data collection fails to collect key data required to inform policy decisions and generally needs improvement,⁵ we believe it may be time to modify Form 477 to better serve the needs of the Commission, Congress, service providers, and consumers. In fact, since the last modification of Form 477, Congress directed the FCC to collect additional information to supplement its analysis of broadband deployment and availability.⁶ As we have noted before, Form 477 collects data that are "a critical precursor" to the Commission's ability to fulfill its statutory duties,⁷ and provides the Commission with "a set of data of uniform quality and reliability" superior to other publicly available information sources.⁸ Form 477 also enables us to fulfill our obligation to reduce government regulation wherever possible,⁹ by providing "a factual basis to evaluate the nature and impact of our existing regulation and, in particular, to identify areas where competition has developed sufficiently to justify deregulation."¹⁰

² *Local Competition and Broadband Reporting*, CC Docket No. 99-301, Report and Order, 15 FCC Rcd 7717, 7718, para. 1 (2000) (*2000 Data Gathering Order*).

³ *Local Telephone Competition and Broadband Reporting*, Report and Order, WC Docket No. 04-141, 19 FCC Rcd 22340, 22342-43, para. 3 (2004) (*2004 Broadband Data Gathering Order*).

⁴ See, e.g., *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 Nos. 09-137, 09-51, Notice of Inquiry, 24 FCC Rcd 10505, 10526-27, para. 45 (2009) (*2009 Sixth Broadband Deployment NOI*); *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, 2402, para. 7 (1999) (*1999 First Broadband Deployment Report*) (relying on 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"); see also INDUS. ANALYSIS & TECH. DIV., FCC, *INTERNET ACCESS SERVICES: STATUS AS OF DECEMBER 31, 2008* at 1 (Feb. 2010) at 4-5, nn.16 & 17 (*December 2010 Internet Access Services Report*) (explaining that mobile wireless connections are only reported at the state level and some business connections could be miscategorized as residential connections), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296239A1.pdf.

⁵ UNITED STATES GOVERNMENT ACCOUNTABILITY OFFICE, *TELECOMMUNICATIONS: CURRENT BROADBAND MEASURES HAVE LIMITATIONS, AND NEW MEASURES ARE PROMISING BUT NEED IMPROVEMENT*, GAO-10-49 at 3-6 (Oct. 2009) (*October 2009 GAO Report*), available at <http://www.gao.gov/new.items/d1049.pdf>.

⁶ Broadband Data Improvement Act of 2008, Pub. L. No. 110-385, 122 Stat. 4097 (codified at 47 U.S.C. §§ 1301-04) at § 103(b); 47 U.S.C. § 1303(b) (BDIA).

⁷ *2000 Data Gathering Order*, 15 FCC Rcd at 7719, para. 2.

⁸ *Id.* at 7726, para. 14.

⁹ See 47 U.S.C. §§ 160(b), 161(a)(2).

¹⁰ *2000 Data Gathering Order*, 15 FCC Rcd at 7720, para. 5.

II. BACKGROUND

A. Form 477 Data Program

3. *Development of FCC Form 477.* The Commission initiated the Form 477 data program in May 2000 to “materially improve its ability to develop, evaluate, and revise policy” for broadband and telephone services, and “to provide valuable benchmarks for Congress, the Commission, other policy makers, and consumers.”¹¹ The Commission designed the program as a standardized collection, with separate sections on subscriptions to broadband services, local telephone service competition, and mobile telephony services.¹²

4. In establishing the Form 477 framework for broadband data, the Commission anticipated that a “regular and consistent survey of broadband deployment” would substantially assist it in fulfilling its statutory duty under section 706 of the Telecommunications Act to report to Congress on broadband deployment and availability, and to encourage the deployment of broadband to all Americans.¹³ To that end, the initial Form 477 collected broadband subscribership data. Specifically, the form collected data from facilities-based providers on the numbers of connections to the Internet in service to consumers in each state, and whether such connections used the provider’s own facilities, unbundled network elements (UNEs), special-access lines or other leased lines, or wireless channels.¹⁴ The Commission established 200 kilobits per second (kbps) as the minimum transfer-speed threshold for the connections it would track,¹⁵ and required providers to identify the technology used to provide the connections,¹⁶ the percentage of connections offered to residential customers and small businesses,¹⁷ and each ZIP code in which the providers had at least one connection in service.¹⁸

5. The initial Form 477 likewise collected subscribership data for local telephone service, including data from incumbent local exchange carriers (LECs) and competitive LECs on the number of voice-grade equivalent lines and fixed wireless channels in service for the provision of local exchange or exchange access service to end-user customers and for resale.¹⁹ The original Form 477 required LECs to report the five-digit ZIP codes in which customers served, by reported lines and wireless channels. Mobile telephony providers were required to report their total subscribers by state, and the percentage of customers billed directly by the reporting provider.

6. The initial Form 477 program did not require small providers to file reports. Specifically, broadband service providers with fewer than 250 connections in service in a state were not required to file the form.²⁰ LECs with fewer than 10,000 voice-grade equivalent lines or wireless channels in service, and mobile telephony providers with fewer than 10,000 subscribers were similarly not required to file.²¹

¹¹ *Id.* at 7718, para. 1.

¹² *Id.* at 7749–50, 7753–54, 7756–57, 7772–90, paras. 66, 75, 84, App. B.

¹³ *Id.* at 7725, para. 13; 47 U.S.C. § 1302(b).

¹⁴ *2000 Data Gathering Order*, 15 FCC Rcd at 7749–50, para. 66.

¹⁵ *Id.*

¹⁶ *Id.* at 7750, para. 67.

¹⁷ *Id.* at 7751, para. 69.

¹⁸ *Id.* at 7721, para. 6.

¹⁹ In addition, LEC respondents reported the percentage of lines provided over the carriers’ own facilities, the percentage provided over UNE loops obtained from other LECs, and the percentage provided by competitive LECs directly from incumbent LEC switching centers in which the competitive LEC was collocated.

²⁰ *2000 Data Gathering Order*, 15 FCC Rcd at 7739, 7745, paras. 40, 52.

²¹ *Id.*

7. *Revisions to Form 477.* The Commission has twice modified Form 477. First, in 2004, the Commission revised the Form 477 program to require submissions from *all* facilities-based providers of broadband connections, in order to capture a more comprehensive picture of broadband deployment in rural areas.²² Further, the Commission required filers to report the percentage of their connections that fell into five speed tiers.²³ The Commission also required all wired and fixed wireless providers to report the technologies used to provide service in the ZIP codes in which at least one connection was in service.²⁴ The Commission acknowledged that mobile broadband service differs in some respects from fixed broadband service, and required filers reporting mobile wireless broadband subscribers to list the ZIP codes that “best represent the filers’ mobile wireless broadband coverage areas.”²⁵

8. The Commission next refined the Form 477 data program in 2008, establishing the framework that is currently in place. The Commission decided to collect more granular subscription and speed data, and to improve the quality of data on mobile wireless broadband services.²⁶ All wireline and terrestrial-fixed wireless broadband service providers must now report the numbers of subscribers at the census-tract level, broken down by technology and more disaggregated speed tiers,²⁷ and the percentage of subscribers that are residential.²⁸ Incumbent LECs must continue to report the percentage of their service areas where DSL connections are available to residential premises, and cable system operators must do the same with regard to cable modem service availability.²⁹ Providers of terrestrial mobile wireless broadband services must continue to submit their broadband subscriber totals on a state-by-state basis, rather than at

²² *2004 Broadband Data Gathering Order*, 19 FCC Rcd at 22345-46, paras. 8-9 (“Based on our experience with the Form 477 over the past nearly five years, we now conclude that the current thresholds render impossible a thorough understanding of the dynamics of broadband deployment in states with rural and/or underserved areas.”).

²³ *Id.* at 22347-48, para. 14. These tiers were: (1) greater than 200 kilobits per second (kbps) and less than 2.5 megabits per second (Mbps); (2) greater than or equal to 2.5 Mbps and less than 10 Mbps; (3) greater than or equal to 10 Mbps and less than 25 Mbps; (4) greater than or equal to 25 Mbps and less than 100 Mbps; and (5) greater than or equal to 100 Mbps.

²⁴ *Id.* at 22349-50, para. 18.

²⁵ *Id.*

²⁶ *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 (2008) (*2008 Broadband Data Gathering Order and Further Notice*); *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, Order on Reconsideration, 23 FCC Rcd 9800 (2008) (*2008 Broadband Data Gathering Reconsideration Order*).

²⁷ The Commission updated the broadband reporting tiers, which now consist of an upload speed tier of 200 kbps or less and upload and download speeds of: (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—for a total of 72 speed-tier combinations. *2008 Broadband Data Gathering Order and Further Notice*, 23 FCC Rcd at 9700-01, para. 20.

²⁸ Previously, the Commission required providers to compile a list of ZIP codes in which they offered service, but collected subscriber counts only at the state level and in accordance with less granular speed tiers. *See, e.g., 2000 Data Gathering Order*, 15 FCC Rcd at 7761, para. 94; 7772-73, App. B Cover Page, Part I.

²⁹ *See 2004 Broadband Data Gathering Order*, 19 FCC Rcd at 22349, para. 16.

the census-tract level, and must report on the census tracts that “best represent” their broadband service footprint for each speed tier in which they offer service.³⁰

9. The *2008 Broadband Data Gathering Order and Further Notice* also required providers of interconnected VoIP services to report the number of subscribers in each state, the number of subscribers who purchase the service in conjunction with the purchase of a broadband connection and, of those, the types of connections purchased.³¹ Interconnected VoIP providers also must report the percentage of subscribers who can use the service over any broadband connection.³²

10. *2008 Further Notice*. The Commission sought comment in 2008 on further revisions to Form 477, including whether and how to institute a national broadband availability mapping program. The Commission tentatively concluded that it “should collect information that providers use to respond to prospective customers to determine on an address-by-address basis whether service is available.”³³ The Commission sought comment on standardized collection formats; whether it should collect information on pricing and actual speeds of broadband services; how generally to maintain the confidentiality of broadband data; whether the Commission should conduct and publish periodic consumer surveys on broadband services; and whether it should require LECs and interconnected VoIP providers to report the number of subscribers in geographic units below the state level, either by ZIP code or census tract.³⁴

B. Other Developments Relating to Data Collection

11. Since the adoption of the *2008 Broadband Data Gathering Order and Further Notice*, a number of legislative and regulatory developments have affected the obligations of the Commission and other government agencies to collect data related to telephone and broadband services.

1. Broadband Data Improvement Act

12. On October 10, 2008, Congress enacted the Broadband Data Improvement Act (BDIA), expressly finding 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.”³⁵ The BDIA imposed several new obligations on the Commission and other federal agencies.³⁶

³⁰ See *2008 Broadband Data Gathering Order and Further Notice*, 23 FCC Rcd at 9698–99, para. 16.

³¹ *Id.* at 9705-07, paras. 26-31.

³² *Id.* at 9707, para. 31.

³³ *Id.* at 9709, para. 35.

³⁴ *Id.* at 9708, para. 33. This Notice addresses issues that were first raised in WC Docket Nos. 07-38, 08-190 and 10-123 that relate to the Commission’s data programs. Given the changes that the industry has experienced since the *2008 Broadband Data Order and Further Notice*, the increased focus on broadband issues by the Commission and Congress (*see* Section II.B, *infra*), and the administrative efficiencies that will result from consolidating these issues in a single docket, we hereby open a new docket and incorporate the comments and *ex parte* presentations of WC Docket Nos. 07-38, 08-190 and 10-123. Commenters need not resubmit material previously filed in those proceedings.

³⁵ BDIA § 102(3); 47 U.S.C. § 1301(3).

³⁶ In particular, the Census Bureau, in consultation with the Commission, is required to expand the Census Bureau’s American Community Survey to include additional questions on residential subscriptions to broadband services. *See* BDIA § 103(d); 47 U.S.C. § 1303(d). The BDIA also directed the Small Business Association to conduct a survey evaluating the impact of broadband speed and price on small businesses by October 10, 2010. *See* BDIA § 105; 47 U.S.C § 1304.

a. Revisions to Section 706 Reporting Requirements

13. The BDIA amended section 706 of the Telecommunications Act of 1996 to improve the quality and quantity of data the Commission collects on the deployment and adoption of broadband services.³⁷ First, the BDIA requires the Commission to publish its section 706 reports “annually” instead of “regularly,” as previously required.³⁸ Second, the BDIA requires the Commission to compile “demographic information for unserved areas” as part of the annual section 706 inquiry.³⁹ Specifically, the BDIA requires that the Commission “compile a list of geographical areas not served by any provider of advanced telecommunications capability.”⁴⁰ If Census Bureau data are available, the Commission must “determine, for each such unserved area—(1) the population; (2) the population density; and (3) the average per capita income.”⁴¹

14. The BDIA also requires the Commission to perform an international comparison in its annual broadband deployment report conducted pursuant to section 706 of the Telecommunications Act.⁴² Specifically, section 1303 of Title 47 now requires the Commission to “include information comparing 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.”⁴³

b. The GAO’s Report on Broadband Metrics and Standards

15. In addition, the BDIA required the GAO’s Comptroller General to conduct a study and issue a report on broadband metrics and standards by October 10, 2009.⁴⁴ That report evaluated 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.”⁴⁵

16. The GAO found that current measures of broadband performance “have limitations,” that “views were mixed on potential alternatives, and ongoing [broadband data collection] efforts need improvement.”⁴⁶ Further, stakeholders reported to the GAO that the data collected by the FCC Form 477 “[do] not include information on availability, price, or actual delivered speeds, which limits the ability to make comparisons across the country and inform policy or investment decisions.”⁴⁷

2. Recovery Act

17. In February 2009, Congress enacted the American Recovery and Reinvestment Act (ARRA),⁴⁸ which directed the Commission to develop a national broadband plan to ensure that all people of the United

³⁷ BDIA § 101; 47 U.S.C. § 1301.

³⁸ BDIA § 103(a)(1); 47 U.S.C. § 1302(b).

³⁹ BDIA § 103(a)(3); 47 U.S.C. § 1302(c).

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² BDIA § 103(b); 47 U.S.C. § 1303(b).

⁴³ *Id.*

⁴⁴ BDIA § 104(b).

⁴⁵ BDIA § 104(a).

⁴⁶ See OCTOBER 2009 GAO REPORT, n.4.

⁴⁷ *Id.*

⁴⁸ See American Recovery and Reinvestment Act of 2009, § 6001(k)(2), Pub. L. No. 111-5, 123 Stat. 115 (2009) (Recovery Act or ARRA).

States have access to broadband.⁴⁹ The ARRA also directed the National Telecommunications and Information Administration (NTIA) to develop and maintain a comprehensive nationwide and publicly available map of broadband service capability and availability.⁵⁰

a. National Broadband Plan

18. Section 6001(k) of the ARRA instructed the Commission to submit to Congress a national broadband plan that would analyze mechanisms for ensuring broadband access by all people of the United States, provide a detailed strategy for achieving affordability and maximum usage, and include a plan for use of broadband to advance national purposes such as education, health care, energy, and public safety.⁵¹ The resulting National Broadband Plan, published on March 16, 2010, noted the necessity for “continuous collection and analysis of detailed data on competitive behavior,”⁵² and stressed the need for the Commission to conduct “more thorough data collection to monitor and benchmark competitive behavior.”⁵³ In particular, recommendation 4.2 of the Plan suggested that the Commission “revise Form 477 to collect data relevant to broadband availability, adoption and competition.”⁵⁴

b. NTIA’s Broadband Inventory Map

19. In order to comply with requirements under the BDIA and the ARRA, NTIA in July 2009 established a State Broadband Data and Development Grant Program (SBDD).⁵⁵ Through this program, NTIA has awarded grants, funded through 2015, to certain state-designated entities to fund the collection of data from broadband providers.⁵⁶ The data collected by NTIA as part of the SBDD program will help populate a national broadband inventory map, which will be made public in February of this year.⁵⁷ In

⁴⁹ FEDERAL COMMUNICATIONS COMMISSION, CONNECTING AMERICA: THE NATIONAL BROADBAND PLAN, GN Docket No. 09-51 (2010) (NATIONAL BROADBAND PLAN or Plan).

⁵⁰ Recovery Act § 6001(l).

⁵¹ Recovery Act § 6001(k)(2).

⁵² NATIONAL BROADBAND PLAN at 29.

⁵³ *Id.* at 9.

⁵⁴ *Id.* at 43.

⁵⁵ 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, 32547 (July 8, 2009) (*NTIA State Mapping NOFA*).

⁵⁶ Awardees are 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.” *Id.*; see also Department of Commerce, National Telecommunications and Information Administration, State Broadband Data and Development Grant Program, Docket No. 0660-ZA29, Notice of Funds Availability, Clarification, 74 Fed. Reg. 40569 (Aug. 12, 2009) (*NTIA State Mapping NOFA Clarification*); NTIA, STATE BROADBAND DATA AND DEVELOPMENT PROGRAM (BROADBAND MAPPING PROGRAM) FREQUENTLY ASKED QUESTIONS (rel. Aug. 12, 2009), available at http://www2.ntia.doc.gov/html/files/BTOP_BroadbandMappingFAQs.pdf (*NTIA Aug. 12 FAQs*). Consistent with the ARRA, these grants include funding both for broadband mapping and for broadband planning and capacity building. Press Release, Department of Commerce, NTIA, *Commerce’s NTIA Announces Final Recovery Act Investments for State-Driven Broadband Activities* (rel. Sep. 27, 2010), available at http://www.ntia.doc.gov/press/2010/BTOP_SBDD_09272010.html.

⁵⁷ Press Release, Department of Commerce, NTIA, *NTIA Unveils Program to Help States Map Internet Infrastructure*, (rel. Jul. 1, 2009), available at http://www.ntia.doc.gov/press/2009/BTOP_mapping_090701.html.

accordance with the ARRA, this map will allow consumers to determine broadband “availability” through a website that is “interactive and searchable.”⁵⁸

3. The Commission’s Data Innovation Initiative

20. On June 29, 2010, the Commission launched the Data Innovation Initiative, designed to modernize and streamline how the Commission collects, uses, and disseminates data.⁵⁹ As part of the Initiative, the Wireline Competition, Wireless Telecommunications, and Media Bureaus released public notices seeking input on which existing data collections should be eliminated or improved, and which new ones should be added.⁶⁰ Review of the resulting record, along with staff work in the three Bureaus, has identified over twenty data collections that may be outdated and ripe for elimination, as well as a number of statutory reporting obligations that may have outlived their usefulness. We will initiate proceedings to consider elimination of those data collections that are completely within our purview.⁶¹ Recognizing that data collection is essential to fulfill the Commission’s central statutory obligations, including advancing universal service, protecting consumers, promoting competition, and ensuring public safety, we also look forward to working with Congress to eliminate any outdated statutory reporting obligations that they choose to relieve us of.

4. 2010 Biennial Review

21. The Commission also is conducting its 2010 biennial review of telecommunications regulations, pursuant to Section 11 of the Communications Act of 1934, as amended.⁶² This section requires the Commission (1) to review biennially its regulations “that apply to the operations or activities of any provider of telecommunications service,” and (2) to “determine whether any such regulation is no longer necessary in the public interest as the result of meaningful economic competition between providers of such service.”⁶³ The Commission is directed to repeal or modify any regulations that it finds are no longer in the public interest.⁶⁴

III. PURPOSES FOR WHICH THE COMMISSION MUST OBTAIN DATA

22. The Commission must collect timely and reliable information to carry out its statutory duties. In the eleven years that have passed since the Commission established the Form 477 data program, commenters in a number of proceedings have suggested that the broadband and telephone subscription data we currently collect are insufficient to allow the Commission to fulfill its statutory responsibilities. Telecommunications markets are now in a period of transition to a world in which fixed and mobile broadband networks give consumers access to not only voice communications capability but a myriad of

⁵⁸ Recovery Act § 6001(l). We note that neither the NTIA nor the Commission have defined broadband availability. See *infra* para. 34.

⁵⁹ Press Release, *FCC Launches Data Innovation Initiative* (rel. Jun. 29, 2010), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-299269A1.pdf.

⁶⁰ *Pleading Cycle Established for Comments on Review of Wireline Competition Bureau Data Practices*, WC Docket No. 10-132, Public Notice, 25 FCC Rcd 8213 (WCB 2010); *Pleading Cycle Established for Comments on Review of Wireless Competition Bureau Data Practices*, WT Docket No. 10-131, Public Notice, 25 FCC Rcd 8373 (WTB 2010); *Pleading Cycle Established for Comments on Review of Media Bureau Data Practices*, MB Docket No. 10-103, Public Notice, 25 FCC Rcd 8236 (MB 2010).

⁶¹ See *supra* n.1.

⁶² 47 U.S.C. § 161; 2010 Biennial Review Public Notice. Comments in that proceeding are due January 31, 2011, with reply comments due February 22, 2011.

⁶³ 47 U.S.C. § 161.

⁶⁴ The Commission resolved several interpretative issues under the Section 11 standard in the *2002 Biennial Regulatory Review*, FCC 02-342, 18 FCC Rcd 4726 (2003), *aff’d*, *Cellco Partnership v. FCC*, 357 F.3d 88 (D.C. Cir. 2004) (*Cellco Partnership*).

other applications and services. Commission data shows that there are now more than 274 million mobile telephony subscriptions in the United States,⁶⁵ and interconnected VoIP subscriptions increased by more than 20% during 2009 while traditional PSTN switched access lines decreased by 6%.⁶⁶

23. The National Broadband Plan recommended that the Commission closely observe this transition from legacy circuit-switched networks to all IP, broadband networks to ensure that legacy regulations and services do not impede the transition to a modern and efficient use of resources, that businesses can plan for and adjust to new standards,⁶⁷ and, perhaps most importantly, that consumers do not lose access to statutorily required “adequate facilities at reasonable charges.”⁶⁸ Commenters in the National Broadband Plan suggested that the Commission collect data, or seek comment on the need to collect data, on a variety of issues related to this transition, including public safety,⁶⁹ service quality,⁷⁰ customer satisfaction,⁷¹ and price.⁷² Below, we identify a number of important purposes for which the Commission and commenters have noted that we may require more robust data, and seek comment on the data needed to fulfill those purposes.

A. Ensuring Universal Service

24. Section 254 of the Act, which governs administration of universal service programs, requires the Commission to base its universal service policies on certain principles, including that “[q]uality services” be “available at just, reasonable, and affordable rates,”⁷³ and that “[c]onsumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services . . . that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.”⁷⁴ A key goal set forth in the National Broadband Plan is to reform the Universal Service Fund (USF) to “accelerate the deployment of broadband to unserved areas,”⁷⁵ and the

⁶⁵ WIRELINE COMPETITION BUREAU, FCC, INDUSTRY ANALYSIS AND TECHNOLOGY DIVISION, LOCAL TELEPHONE COMPETITION: STATUS AS OF DECEMBER 31, 2009, at 29 (rel. Jan. 2011) available at http://www.fcc.gov/Daily_Releases/Daily_Business/2011/db0111/DOC-304054A1.pdf.

⁶⁶ *Id.* at 3.

⁶⁷ NATIONAL BROADBAND PLAN, § 4.5 at 59; see also *Comment Sought on Transition from Circuit-Switched Network to All-IP Network*, NATIONAL BROADBAND PLAN PN #25, GN Docket Nos. 09-47, 09-51, 09-137, 24 FCC Rcd 14272 (Dec. 1, 2009).

⁶⁸ 47 U.S.C. § 151.

⁶⁹ See, e.g., California Public Utilities Commission Comments in re NATIONAL BROADBAND PLAN PN #25, filed Dec. 18, 2009, at 8-11; Intrado Inc. et al. Dec. 21, 2009 Comments in re NATIONAL BROADBAND PLAN PN#25, GN Docket Nos. 09-47, 09-51, 09-137 at 2-7; Metaswitch Networks Dec. 17, 2009 Comments in re NATIONAL BROADBAND PLAN PN#25, GN Docket Nos. 09-47, 09-51, 09-137 at 4.

⁷⁰ See, e.g., Empirix Comments in re NATIONAL BROADBAND PLAN PN #25, filed Dec. 4, 2009, at 7 (filed as Mark Ivanov); Southwick Comments in re NATIONAL BROADBAND PLAN PN #25, filed Dec. 4, 2009, at 1.

⁷¹ See, e.g., GVNW Comments in re NATIONAL BROADBAND PLAN PN #25, filed Dec. 22, 2009, at 3; Skype Comments in re NATIONAL BROADBAND PLAN PN #25, filed Dec. 22, 2009, at 9.

⁷² See, e.g., New Jersey Division of Rate Counsel Comments in re NATIONAL BROADBAND PLAN PN #25, filed Dec. 21, 2009, at 10.

⁷³ 47 U.S.C. § 254(b)(1).

⁷⁴ 47 U.S.C. § 264(b)(1), (3).

⁷⁵ NATIONAL BROADBAND PLAN at xiii, section 8.2. We seek comment in an item released today on a framework to modernize the Commission’s USF and intercarrier compensation (ICC) regime. *Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing an Unified Intercarrier Compensation Regime; Federal-State Joint Board* (continued....)

Commission's unanimously adopted *Joint Statement on Broadband* calls for the USF to be reformed "to increase accountability and efficiency, encourage targeted investment in broadband infrastructure, and emphasize the importance of broadband to the future of these programs"⁷⁶

25. We seek comment on the data needed to ensure universal service. Numerous stakeholders have asserted that the Commission must collect deployment, price, and service quality data to effectively fulfill its obligations under section 254 and to modernize the USF to focus on broadband.⁷⁷ For example, Verizon has stated that the Commission must have reliable data to identify areas that are truly unserved by broadband to implement USF reform.⁷⁸ The National Broadband Plan noted that "[a]cross the four USF programs, there is a lack of adequate data to make critical policy decisions regarding how to better utilize funding to promote universal service objectives."⁷⁹ The Commission itself has noted the importance of having reliable data to measure the performance of the USF and to protect against waste, fraud, and abuse.⁸⁰ Would data on deployment, price, service quality, and subscription be required to assess whether the performance goals proposed for the USF high-cost program and Connect America Fund in the NPRM released today are being achieved?⁸¹ Would voice and broadband pricing data be necessary to develop possible rate benchmarks for voice and/or broadband service in order to determine if services are "affordable" and "reasonably comparable to rates in urban areas?"⁸² Would determining whether particular areas of the country—including rural, insular, and high-cost areas—should be exempt from aspects of the USF reform program or afforded different treatment require deployment, subscription, price and service quality data?⁸³

B. Ensuring Public Safety

26. The Communications Act charges the Commission with ensuring that "wire and radio communications service with adequate facilities at reasonable charges" are available for the purpose of,

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on *Universal Service; Lifeline and Linkup*, WC Docket Nos. 10-90, 07-135, 05-337, 03-109, GN Docket No. 09-51, CC Docket Nos. 01-92, 96-45, Further Notice of Proposed Rulemaking, FCC 11-13 (adopted Feb. 8, 2011) (*USF/ICC Transformation NPRM*).

⁷⁶ *Joint Statement on Broadband*, GN Docket No. 10-66, 25 FCC Rcd 3420, para. 3 (2010).

⁷⁷ See, e.g., NASUCA and New Jersey Rate Counsel Sep. 2 Reply Comments, WC Docket 07-38 at 19, 26; Communications Workers of America (CWA) Jul. 17, 2008 Comments, WC Docket 07-38 at 3.

⁷⁸ Verizon Jul. 12, 2010 Comments, WC Docket Nos. 10-90, 05-337, GN Docket No. 09-51 at 6-7. See also *USF/ICC Transformation NPRM* at para. 269.

⁷⁹ NATIONAL BROADBAND PLAN at 144.

⁸⁰ See, e.g., *Comprehensive Review of Universal Service Fund Management, Administration, and Oversight*, WC Docket Nos. 05-195, 02-60, 03-109, CC Docket Nos. 96-45, 02-6, 97-21, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, 20 FCC Rcd 11308, 11318-19, para. 24 (2005) at para. 24 ("Clearly articulated goals and reliable performance data allow the Commission and other stakeholders to assess the effectiveness of the USF programs . . ."); FCC, FISCAL YEAR 2010 AGENCY FINANCIAL REPORT (OCTOBER 1, 2009 - SEPTEMBER 30, 2010) at 84-87, available at www.fcc.gov/Reports/fr2010.pdf.

⁸¹ *USF/ICC Transformation NPRM* at paras. 483-89 (proposing the following four specific performance goals for the current high-cost program and the Connect America Fund: (1) preserve and advance voice service; (2) increase deployment of modern networks; (3) reasonably comparable rates for broadband and voice services; and (4) limit universal service contribution burden on households.).

⁸² 47 U.S.C. § 254; *USF/ICC Transformation NPRM* at para. 139.

⁸³ For example, deployment, subscription, price and quality of service data that can be verified by the Commission may be critical to determining whether to exempt Tribal lands, Alaska Native Regions, and Hawaiian Home Lands from the phase out of the interim competitive eligible telecommunications carrier cap. See *USF/ICC Transformation NPRM* para. 259.

inter alia, “promoting safety of life and property through the use of wire and radio communications.”⁸⁴ Congress has further tasked the Commission with a key role in guaranteeing that Americans have access to emergency services via 911.⁸⁵ The Commission must be able to monitor the performance of both legacy circuit-switched networks and broadband networks to ensure that consumers can access emergency services as service providers transition from one technology to the other. As noted in the National Broadband Plan, “[a] more reliable [broadband] network would also benefit homeland security, public safety, businesses and consumers, who are increasingly dependent on their broadband communications, including their mobile phones.”⁸⁶

27. We seek comment on what data the Commission needs to fulfill these goals. Would mobile service deployment data, for example, allow the Commission to identify areas where consumers lack access to 911 service, such as rural highways or remote worksites? Would service quality data enable the Commission to identify networks that limit consumers’ access to emergency services as a result of excessive downtime? Could customer complaint data likewise serve as an indicator that networks are insufficiently reliable to ensure that consumers can depend on them in an emergency?

C. Promoting Telephone and Broadband Competition

28. Promoting competition is a core purpose of the Telecommunications Act of 1996, as amended,⁸⁷ and as the National Broadband Plan noted, “[c]ompetition is crucial for promoting consumer welfare and spurring innovation and investment in broadband access networks,” and “provides consumers the benefits of choice, better service and lower prices.”⁸⁸ Others have noted the importance of competition

⁸⁴ 47 U.S.C. § 151.

⁸⁵ Congress directed the Commission in 1999 to, among other things, designate 911 as the universal emergency assistance number for wireless and wireline calls. *See* Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, 113 Stat. 1286, § 3(b) (1999) (911 Act) (codified at 47 U.S.C. § 615). Congress since has amended the 911 Act to codify the Commission’s 911 regulations for interconnected VoIP providers, and to establish an advisory committee. *See* New and Emerging Technologies 911 Improvement Act of 2008, Pub. L. No. 110-283, 122 Stat. 2620 (2008) (NET 911 Act). Congress also has directed the Commission to establish an advisory committee for the purpose of achieving equal access to emergency services by individuals with disabilities as part of our nation’s migration to next generation 911 systems. *See* Twenty-First Century Communications and Video Accessibility Act of 2010, PL 111-260, § 106; *see also* *FCC Requests Nominations for Membership on the Emergency Access Advisory Committee in Accordance with the Twenty-First Century Communications and Video Accessibility Act of 2010*, Public Notice, DA 10-2001 (Oct. 19, 2010).

⁸⁶ NATIONAL BROADBAND PLAN at 251.

⁸⁷ *See* Conference Report, Telecommunications Act of 1996, House of Representatives, 104th Congress, 2d Session, H. Rpt. 104-458, at 1 (stating the purpose of the Telecommunications Act of 1996 was “to provide for a pro-competitive, de-regulatory national policy framework designed to accelerate rapidly private sector deployment of advanced services and information technologies and services to all Americans by opening all telecommunications markets to competition.”).

⁸⁸ NATIONAL BROADBAND PLAN at 36. The Commission has repeatedly recognized the importance of competition information in carrying out its statutory duty to conduct broadband inquiries. The *2000 Data Gathering Order* identified several essential areas of inquiry from the *1999 First Broadband Deployment Report*, most of which center on competition analysis: “Key issues in evaluating deployment of advanced telecommunications capabilities include the state of competition in the residential advanced telecommunications services market, the existence of barriers to speedy deployment (especially of new technologies), the nature of demand for advanced telecommunications services among residential customers, and possible slow deployment in rural and low-income areas, and among persons with disabilities.” *2000 Data Gathering Order*, 15 FCC Rcd at 7719, n.5. In the *2004 Broadband Data Gathering Order*, the Commission introduced state-level subscription estimates for cable modem and incumbent LEC DSL connections “to better enable us to monitor the extent to which these broadband platforms are available to all Americans, and to ascertain with more precision the pattern of competition between these platforms.” *2004 Data Gathering Order*, 19 FCC Rcd at 22349, para. 16.

to consumer welfare.⁸⁹ In addition, vibrant competition in a market can reduce or eliminate the need for regulation. For example, competition, properly demonstrated, can be the basis for forbearance from regulations under section 10 of the Act.⁹⁰ As the Commission previously has found in the context of its section 10 analysis, “competition is the most effective means of ensuring that . . . charges, practices, classifications, and regulations . . . are just and reasonable, and not unjustly or unreasonably discriminatory.”⁹¹ The Commission also is required to annually present its findings regarding the state of competition in the mobile services marketplace pursuant to Congress’s instruction in section 332(c)(1)(C) of the Act.⁹²

29. Despite the importance of assessing competition in order to fulfill the Commission’s statutory responsibilities, the Commission does not always have sufficient information about voice and broadband services sufficient to assess competition accurately. For example, the Commission has recognized that a lack of comprehensive data on telephone and broadband services has, in certain situations, compromised the rigor of its analysis in proceedings seeking the transfer of Title III licenses and section 214 authorizations.⁹³ Similarly, in a decision regarding whether to grant forbearance from network unbundling and other regulations pursuant to section 10 of the Act, the Commission was unable to make a definitive finding regarding market share in the telephony market when the primary cable operator did not voluntarily file reliable data.⁹⁴

30. The National Broadband Plan also noted that statements from a number of commenters—including officials from the Department of Justice and the Federal Trade Commission—demonstrate that “additional data are needed to more rigorously evaluate broadband competition.”⁹⁵ The Plan concluded that

⁸⁹ See, e.g., Department Of Justice (DOJ) Jan. 4, 2010 Comments, GN Docket No. 09-51 at 21.

⁹⁰ 47 U.S.C. § 160; Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona Metropolitan Statistical Area, WC Docket No. 09-135, Memorandum Opinion and Order, 25 FCC Rcd 8622, 8633, 8642, paras. 23, 37.

⁹¹ *Petition of US WEST Communications Inc. for a Declaratory Ruling Regarding the Provision of National Directory Assistance, Petition of U S WEST Communications, Inc., for Forbearance, The Use of N11 Codes and Other Abbreviated Dialing Arrangements*, CC Docket Nos. 97-172, 92-105, Memorandum Opinion and Order, 14 FCC Rcd 16252, 16270, para. 31 (1999) (*US WEST Forbearance Order*).

⁹² 47 U.S.C. § 332(c)(1)(C); see, e.g., *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*, Fourteenth Report, WT Docket No. 09-66, FCC 10-81 (WTB 2010).

⁹³ See, e.g., *SBC Communications Inc. and AT&T Corp. Applications for Approval of Transfer of Control*, WC Docket No. 05-65, Memorandum Opinion and Order, 20 FCC Rcd 18290, 18347, para. 102 n.307 (2005) (*SBC/AT&T*) (“We discuss the Applicants’ market shares before and after the merger instead of HHIs for each geographic market because we do not have sufficient market share information for all of the significant competitors in these markets.”).

⁹⁴ 47 U.S.C. § 160; see *Petitions of the Verizon Telephone Companies for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Boston, New York, Philadelphia, Pittsburgh, Providence and Virginia Beach Metropolitan Statistical Areas*, WC Docket No. 06-172, Memorandum Opinion and Order, 22 FCC Rcd 21293, 21308, para. 28 (2006) (*Verizon 6-MSA Order*) (determining that the Commission lacked sufficient evidence to determine Verizon’s market share in the New York MSA consistent with its approach for the other MSAs, where the primary cable competitor did not voluntarily file complete and correct data).

⁹⁵ NATIONAL BROADBAND PLAN at 37, citing DOJ Ex Parte in re National Broadband Plan NOI, filed Jan. 4, 2010 at 7; Gregory L. Rosston, Deputy Director, Stanford Institute for Economic Policy Research, *Remarks at FCC Benchmarks Workshop* 5–17 (Sept. 2, 2009), available at http://www.broadband.gov/docs/ws_20_benchmarks.pdf; James Prieger, Professor of Pub. Policy, Pepperdine Univ., *Remarks at FCC Economic Growth, Job Creation and Private Investment Workshop* 4–15 (Aug. 26, 2009), available at http://broadband.gov/docs/ws_16_economy.pdf; Ryan McDevitt, Lecturer, Dep’t of Manag. & Strat., Northwestern Univ., *Remarks at FCC Economic Growth, Job Creation and Private Investment Workshop* 23–34 (Aug. 26, 2009), available at <http://> (continued....)

to ensure that the right policies are put in place so that the broadband ecosystem benefits from meaningful competition as it evolves, it is “important to have an ongoing, data-driven evaluation of the state of competition.”⁹⁶ The National Broadband Plan therefore recommended that the Commission “revise Form 477 to collect data relevant to broadband availability, adoption and competition.”⁹⁷ Numerous commenters have made similar observations and recommendations.⁹⁸

31. It is important to note that although more robust deployment and subscription data may give the Commission a view of the potential for competition in an area,⁹⁹ the National Broadband Plan and a number of commenters have explained that such data alone would not necessarily reveal the actual extent of competition or the level of benefit that consumers enjoy from any competition that exists, and that price and service quality data could fill these gaps.¹⁰⁰ We seek comment on the need for price and service quality data as well as deployment and subscription data to satisfy relevant statutory goals.

D. Promoting Broadband Deployment and Availability

32. As discussed above, Section 706(b) of the Telecommunications Act of 1996, as amended, directs the Commission to annually “initiate a notice of inquiry concerning the availability of advanced telecommunications capability to all Americans” and “determine whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”¹⁰¹ The Commission has noted that information about broadband deployment and availability throughout the nation is essential to fulfill its obligations under section 706, including the requirement to compile information about demographic information for unserved areas.¹⁰²

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broadband.gov/docs/ws_16_economy.pdf; Joseph Farrell, Director, Bureau of Econ., FTC, *Remarks at FCC Economic Issues in Broadband Competition Workshop 55–66* (Oct. 9, 2009), available at http://broadband.gov/docs/ws_28_economic.pdf; Carl Shapiro, Deputy Ass’t Attorney General for Economics, Antitrust Div., DOJ, *Remarks at FCC Economic Issues in Broadband Competition Workshop 66–83* (Oct. 9, 2009), available at http://broadband.gov/docs/ws_28_economic.pdf.

⁹⁶ NATIONAL BROADBAND PLAN at 37.

⁹⁷ *Id.* at 43.

⁹⁸ *See, e.g.*, DOJ Jan. 4, 2010 Comments, GN Docket No. 09-51 at 7; Free Press Aug. 13, 2010 Comments, WC Docket No. 10-132 at 5 (“Broadband subscribership and availability, along with speed and price, represent the most basic information concerning broadband.”).

⁹⁹ Though the NTIA obtains deployment data through the SBDD, the Commission does not currently collect deployment data. *See* Section II.B.2.b, *supra*.

¹⁰⁰ *See, e.g.*, NATIONAL BROADBAND PLAN at 42 (“[I]t is crucial that the FCC track and compare the evolution of pricing in areas where two service providers offer very high peak speeds with pricing in areas where only one provider can offer very high peak speeds. The FCC should benchmark prices and services and include these in future reports on the state of broadband deployment.”); DOJ Jan. 4, 2010 Comments, GN Docket No. 09-51 at 20; Consumers Union et al. Sep. 2, 2008 Comments, WC Docket No. 07-38 at 8; People of the State of Illinois Sep. 2, 2008 Comments, WC Docket No. 07-38 at 6; NASUCA and New Jersey Rate Counsel Sep. 2, 2008 Reply Comments, WC Docket 07-38 at 26; Horizontal Merger Guidelines, issued by the U.S. Dept. of Justice & Federal Trade Commission (Apr. 2, 1992, revised Aug. 19, 2010) at 2 (“Enhancement of market power by sellers often elevates the prices charged to customers. For simplicity of exposition, these Guidelines generally discuss the analysis in terms of such price effects. Enhanced market power can also be manifested in non-price terms and conditions that adversely affect customers, including reduced product quality, reduced product variety, reduced service, or diminished innovation. Such non-price effects may coexist with price effects, or can arise in their absence.”).

¹⁰¹ 47 U.S.C. § 1302(b).

¹⁰² *2008 Broadband Data Gathering Order and Further Notice*, 23 FCC Rcd at 9694, para. 8 (citing 47 U.S.C. § 157nt (incorporating section 706 of the Telecommunications Act of 1996, Pub. Law No. 104-104, 110 Stat. 56 (continued....)

33. We seek comment on whether the Commission has data sufficient to effectively fulfill this purpose. The Commission has observed that the data it has collected to date have allowed only limited assessments of broadband deployment and availability. For example, the Commission has used information about the existence of at least one subscriber in a ZIP code or census tract as a proxy for both deployment and availability.¹⁰³ But the Commission and commenters have noted that subscription data, particularly when collected above the household level, is an imperfect proxy for network deployment or capability.¹⁰⁴ For example, deployment is overstated when households subscribe in one part of an area (such as a census tract) but service is not offered to households in other parts of the same area, while deployment is understated if no household in an area has chosen to subscribe to any service offering provided by a network, and capability is understated if no household has opted for the highest speed offering.

34. We also note that the Commission has long identified broadband availability as a broader concept than broadband deployment.¹⁰⁵ A number of commenters have suggested that the Commission collect other types of data beyond the Form 477 subscribership data to fulfill its obligations under section 706, including information on where infrastructure has been deployed,¹⁰⁶ the price of broadband services,¹⁰⁷ and service quality.¹⁰⁸ Would the use of such data sources in conjunction with subscription data provide additional insights into broadband adoption in the United States?¹⁰⁹ If infrastructure data were collected,

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(1996))). Section 706 of the Telecommunications Act of 1996 was later codified at 47 U.S.C. § 1302 *et seq.* by the BDIA.

¹⁰³ 1999 *First Broadband Deployment Report*, 14 FCC Rcd at 2402, 2404, paras. 7, 13 (“this Report uses actual subscribership as a proxy for ‘deployment’ and ‘availability’”); *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, Second Report, 15 FCC Rcd 20913, 20916-17, para. 7 (2000) (2000 *Second Broadband Deployment Report*); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 10-159, Seventh Broadband Deployment Notice of Inquiry, 25 FCC Rcd 11355, 11363, para. 18 (2010 *Seventh Broadband Deployment NOI*).

¹⁰⁴ See, e.g., 2009 *Sixth Broadband Deployment NOI*, 24 FCC Rcd at 10526-27, para. 45; 1999 *First Broadband Deployment Report*, 14 FCC Rcd at 2402, para. 7 (relying on 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”); see also December 2010 *Internet Access Services Report* at 4-5, nn.16 & 17 (explaining that mobile wireless connections are only reported at the state level and some business connections could be miscategorized as residential connections).

¹⁰⁵ 1999 *First Broadband Deployment Report*, 14 FCC Rcd at 2409-10, para. 30 (“The record before us focuses on deployment of advanced capability, such as investment and construction plans, and generally lacks information about availability, which we believe refers to a consumer’s ability to purchase a capability that has been deployed.”); 2000 *Second Broadband Deployment NOI*, 15 FCC Rcd at 16648, para. 13 n.26 (“Factors that affect the availability of broadband services might include the existence of content that requires broadband service for a consumer to receive it, the purchase of personal computers for the home, trends in the operation of the Internet, the ability of WebTV and other TV set-based forms of Internet access which require broadband speeds, and the development of technology that will enable a cost-effective fixed wireless last mile.”).

¹⁰⁶ See, e.g., California PUC Oct. 2, 2011 Reply Comments, GN Docket Nos. 09-137, 09-51 at 4 (recommending against the use of subscribership data because “[a]vailability data, or infrastructure data, shows where broadband is available. Meanwhile, subscribership data denotes where consumers are choosing to purchase broadband service.”).

¹⁰⁷ See, e.g., Consumer Federation of America *et al.* Sep. 2, 2008 Comments, WC Docket No. 07-38 at 4.

¹⁰⁸ See, e.g., Hugh Carter Donahue & Josephine Ferringo-Stack, *Broadband Quality of Service Monitoring: A Promising Public Policy Response*, NTIA Docket No. 011109273-1273-01, available at <http://www.ntia.doc.gov/ntiahome/broadband/comments2/donahuestack.htm>.

¹⁰⁹ See BDIA § 102.

how could the Commission ensure that sensitive information on critical infrastructure is appropriately shielded and protected?

E. Other Statutory Obligations

35. We seek comment on other statutory obligations and Commission efforts that may require the Commission to reform its the 477 data program. In addition, we seek comment on whether the subscription data currently collected via Form 477 and the Commission's other data collection programs are sufficient for such obligations, or whether the Commission should collect additional types of data. Commenters who advocate the collection of additional data should explain how collecting specific types of data would result in concrete benefits for consumers, service providers, and other stakeholders, and explain whether the benefits would outweigh the burdens.

IV. REVISIONS TO THE FCC FORM 477 DATA PROGRAM

36. In the preceding section, we discussed specific statutory obligations of the Commission that, to be performed effectively, may require the collection of better data. We turn now to discussion of what specific data may be necessary to discharge these statutory responsibilities, and whether and (where relevant) how we should collect each type of data using Form 477. After reviewing input from outside parties, we believe that there are five categories of data that may be necessary to meet the Congressional mandates described in the prior section: deployment, pricing, and service quality and customer satisfaction data, which provide measures of supply; subscription data, which provides a measure of consumer demand; and ownership and contact information, which serves multiple statutory purposes. While collecting other categories of data, such as the location of last- and middle-mile infrastructure,¹¹⁰ could prove useful to the Commission, Form 477 may not be the most appropriate tool for collecting such data. We seek comment on whether there are other types of data necessary for the Commission to complete its mandates that should be collected using Form 477.

37. We recognize that data collections place burdens – and potentially significant burdens – on those required to file, and we actively seek to balance the benefits of data collected against those burdens. We seek comment on whether each of the types of data noted below is necessary for the Commission to fulfill its statutory mandates. Those who suggest that the Commission does not need particular data should specify how the Commission can meet its obligations without such data. For data that the Commission should collect, we seek comment on whether the Commission should gather the data through an OMB-approved data collection or whether there are other sources. For example, are there commercial data sources that would allow the Commission to meet its obligations? Alternatively, would it be practical for Commission staff to collect data from public sources (e.g., from service providers' websites)? Those advocating the use of commercial or publicly available data should discuss any limitations associated with such sources,¹¹¹ the resources the Commission would need to devote to the collection method proposed

¹¹⁰ See *NTIA State Mapping NOFA*, 74 Fed. Reg. at 32557, NOFA Technical Appendix A; *Service Quality, Customer Satisfaction, Infrastructure and Operating Data Gathering; Petition of AT&T Inc. for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain of the Commission's ARMIS Reporting Requirements; Petition of Qwest Corporation for Forbearance from Enforcement of the Commission's ARMIS and 492A Reporting Requirements Pursuant to 47 U.S.C. § 160(c); Petition of the Embarq Local Operating Companies for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain of ARMIS Reporting Requirements; Petition of Frontier and Citizens ILECs for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain of the Commission's ARMIS Reporting Requirements; Petition of Verizon for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain of the Commission's Recordkeeping and Reporting Requirements; Petition of AT&T Inc. for Forbearance Under 47 U.S.C. § 160 from Enforcement of Certain of the Commission's Cost Assignment Rules*, WC Docket Nos. 08-190, 07-139, 07-204, 07-273, 07-21, Memorandum Opinion and Order and Notice of Proposed Rulemaking, 23 FCC Rcd 13647, 13664, para. 34 (2008) (*ARMIS Forbearance Order and Notice*) (tentatively concluding that the collection of infrastructure and operating data could be useful to the Commission's public safety and broadband policymaking).

¹¹¹ See *infra* para 42.

(e.g., direct costs, staff time), and the impact such a collection method would have on other Commission efforts. Where a data collection is necessary, we seek comment on ways that the Commission can minimize the burden for filers, for example, in the design of the collection or in tools the Commission can provide. Commenters who cite the burden of an OMB-approved collection should quantify the burden they expect and explain their quantification methodology. We seek comment on issues specific to reducing the burden of each collection as they are discussed in the following sections.

A. General Considerations

1. Streamlining Collection

38. To reduce production burdens, commenters urge the Commission to ensure that the FCC Form 477 collection process is as “streamlined as possible,” and we agree that streamlining the process where appropriate must be a top priority for the Commission.¹¹² For example, providers request that the Form 477 interface be redesigned to allow parties to file data on multiple states as a single file.¹¹³ We seek comment on these proposals, and on other steps the Commission can take to streamline the Form 477 data program.

39. Reporting entities already maintain subscriber databases that include address-level information; thus, providing subscribership information at the address level could simplify reporting. At the same time, collection of address-level deployment and availability information would allow the Commission to make policy decisions based on a more granular and accurate understanding of the marketplace.¹¹⁴ We note that some providers have explicitly requested that they be allowed to submit subscribership data at the address level to reduce their reporting burden.¹¹⁵ We seek comment whether it would be less burdensome for providers to submit address-level data with respect to the deployment and availability of services. We also seek comment on other ways that the Commission can ease the burden on small- and medium-sized providers.

40. In addition, we seek comment on the extent to which technological tools can reduce the burden of producing information. For example, the Commission now makes available a Census Block Conversions application programming interface (API) that returns a U.S. Census Bureau Census Block number given a passed latitude and longitude.¹¹⁶ The API also returns the state and county name associated with a block. Among other benefits, we expect that this API will assist providers in assigning subscribers to census-defined geographic areas. What other tools are available to reduce the burdens providers face in complying with our data reporting programs? Are there other tools that the Commission itself should develop?

2. Use of Third-Party and Publicly Available Data

41. We seek comment on whether and how the Commission can obtain reliable data from third parties and publicly available sources. The Commission in 2007 sought comment on the “availability of commercial sources of broadband deployment data or data-processing programs that could augment or otherwise add value to our use of Form 477 data, or reduce the associated costs and other burdens imposed on reporting providers.”¹¹⁷ The Commission declined to use any such sources in the *2008 Broadband Data*

¹¹² Verizon Aug. 13, 2010 Comments, WC Docket No. 10-132 at 7-8.

¹¹³ *Id.*; see also T-Mobile Sept. 13, 2010 Reply Comments, WC Docket No. 10-132 at 4.

¹¹⁴ We seek comment on the privacy implications of such collections in Section V.C below.

¹¹⁵ See, e.g., OPASTCO-RICA Nov. 24, 2008 Paperwork Reduction Act Comments, WC Docket No. 07-38, OMB Control No. 3060-0816.

¹¹⁶ FCC, CENSUS BLOCK CONVERSIONS API—REBOOT.FCC.GOV, <http://reboot.fcc.gov/developer/census-block-conversions-api>.

¹¹⁷ *Development of National Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Deployment of Data on Interconnected Voice Over Internet Protocol (VoIP) Subscribership*, Notice of Proposed Rulemaking, WC Docket No. 07-38, 22 FCC Rcd 7760, 7774, para. 32 (2007).

*Gathering Order and Further Notice.*¹¹⁸ We note that the Commission currently relies on some third-party data that may be considered authoritative,¹¹⁹ and seek comment on what other data could be obtained by the Commission from third parties. We also seek comment on whether there are new sources of data that could serve Commission goals.

42. We note that there are limitations associated with third-party data sources. Commercial data sources rarely rely on a census of all data sources of a particular type and more often rely on sampling.¹²⁰ The bias associated with sampling, or the use of proprietary methods to create or extrapolate from a sample, could limit the applicability of commercial data. Further, commercial data often include restrictions to data rights that could limit the Commission's ability to publish underlying data or resulting analysis. We seek comment on these potential shortcomings of commercial data, whether there are ways to mitigate them, and the balance between these limitations and the burden that could be avoided by the use of commercial data. The Commission could also cull some information from public sources, such as company websites. We note that such data may be unreliable or insufficiently detailed,¹²¹ and seek comment on the extent to which the Commission can base policy on such data.¹²² To the extent commenters advocate for the use of commercial or third-party data for a specific collection, we ask that they quantify the resources the Commission would have to devote to procure or process those data. How should the Commission balance the costs of purchasing data or collecting data itself from public sources against the burdens that Form 477 data collection may impose on service providers?

3. Who Must Report

43. Four classes of entities currently file FCC Form 477: facilities-based providers of broadband connections to end user locations;¹²³ providers of wired or fixed wireless local exchange telephone service;¹²⁴ providers of interconnected VoIP service;¹²⁵ and providers of mobile telephony services.¹²⁶

¹¹⁸ See generally, *2008 Broadband Data Gathering Order and Further Notice*, 23 FCC Rcd at 9695-9708, paras. 9-32.

¹¹⁹ The Commission currently licenses commercial data for mobile network deployment; see *infra* Section IV.B.1.a(ii).

¹²⁰ We note that the Recovery Act authorized NTIA to expend up to \$350 million to “develop and maintain a comprehensive nationwide inventory map of existing broadband service capability and availability in the United States.” See Recovery Act § 6001(l). Such expenditures are likely outside the ability of commercial or non-profit firms.

¹²¹ For example, data available on websites about mobile-network coverage do not indicate signal strength.

¹²² See Free Press Aug. 13, 2010 Comments, WC Docket No. 10-132 at 5 (urging the Commission to “view calls to rely on third party information as an adequate substitute for Commission collection with serious skepticism.”).

¹²³ Broadband connections, for the purpose of Form 477 reporting, are “wired ‘lines’ or wireless ‘channels’ that 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.” FCC, FCC FORM 477 INSTRUCTIONS FOR LOCAL TELEPHONE COMPETITION AND BROADBAND REPORTING (2010) (regarding filings due Sep. 1, 2010), available at <http://www.fcc.gov/Forms/Form477/477inst.pdf> (*FCC Form 477 Instructions*) at 2. In the *2010 Sixth Broadband Deployment Report*, the Commission chose to benchmark broadband as “a transmission service that actually enables an end user to download content from the Internet at 4 Mbps and to upload such content at 1 Mbps over the broadband provider’s network. *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. 09-137, 25 FCC Rcd 9556, 9563, para. 11 (2010) (*2010 Sixth Broadband Deployment Report*).

¹²⁴ Consistent with past practice, for purposes of this proceeding, “local telephone service,” “local telecommunications service,” and “local exchange and exchange access services” refer collectively to the services that are subject to the local competition reporting requirements established in the 2000 *Data Gathering Order*. See *2000 Data Gathering Order*, 15 FCC Rcd at 7735-36, para. 32. These internal references are not meant to affect or modify any existing definitions of similar terms, such as “telephone exchange service,” “exchange access,” and (continued....)

Some entities may fill out only certain portions of the form.

44. Some of the proposals identified below would have the Commission collect from all providers of voice and broadband services data that may have in the past been collected only from a subset of providers. For example, some of the service quality data some have suggested we should collect from all broadband providers formerly were collected only from price cap carriers.¹²⁷ We seek comment on whether there are classes of providers that should be exempted from reporting elements of any proposed data collection. For example, small broadband providers may find it relatively more burdensome to comply with certain data reporting obligations than larger carriers.¹²⁸ Any proposals to exempt certain providers should include the legal and policy grounds and the policy implications for such an exemption.

45. We also seek comment on whether additional classes of entities should be required to file FCC Form 477. For example, should we revise our definition of “interconnected VoIP” for the purposes of this collection to include services that permit users to receive calls that originate on the public switched telephone network *or* to terminate calls to the public switched telephone network?¹²⁹ Proposals to require additional classes of entities to file should discuss the Commission’s authority to do so.

4. Frequency of Reporting

46. The Commission previously has decided that it can best balance its need for timely information with its desire to minimize the reporting burden on respondents by requiring providers to report data on a semi-annual basis. One commenter has asked the Commission to require quarterly collections “to keep pace with rapidly evolving Internet technology and allow regulators to plan and adjust policies.”¹³⁰ Another commenter asks that the Commission synchronize the filing deadlines for FCC Form 477 with those for the

(Continued from previous page) _____

“telecommunications service” as set forth in the Act and our prior orders. *See, e.g.*, 47 U.S.C. §§ 153(16), (46), (47); *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report to Congress, 13 FCC Rcd 11501 (1998).

¹²⁵ *See* 47 CFR § 9.3.

¹²⁶ Consistent with past practice, for purposes of this proceeding, the term “mobile telephone service” has the same meaning as used in the *Data Gathering Order*. *See 2000 Data Gathering Order*, 15 FCC Rcd at 7735-36, para. 32 (noting that the mobile telephony market generally includes providers of cellular, broadband personal communications service (PCS), and specialized mobile radio services that offer real-time, two-way switched voice service that is interconnected with the public switched network utilizing an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless handoffs of subscriber calls); *see also* 47 C.F.R. § 20.15(b)(1). While only facilities-based mobile telephone service providers complete Form 477, those filers report the total number of voice telephone service subscribers served over their systems, whether served directly or via resale by an unaffiliated entity. *See 2000 Data Gathering Order*, 15 FCC Rcd at 7756-57, para. 84.

¹²⁷ *See supra* Section IV.B.4; *see, e.g.*, *ARMIS Forbearance Order and Notice* at 13648-49, paras. 1-2 (2008) (Explaining that the Commission established certain ARMIS reports in order to monitor two potential concerns raised by price cap regulation: first, that carriers might lower quality of service, instead of being more productive, in order to increase short term profits; and second, that carriers might not spend money on infrastructure development.).

¹²⁸ *See, e.g.*, Fred Williamson and Associates Feb. 12, 2009 Comments in Support of Request for Extension, WC Docket No. 07-38 at 1-2 (“FWA supports the purposes of the FCC Form 477, but is concerned that, unless the extension is granted, inaccurate and incomplete data will be provided regarding broadband deployment. . . . The additional time should allow small carriers the time to accurately develop and report the FCC Form 477 data . . .”).

¹²⁹ The Commission’s rules currently define interconnected VoIP as “a service that: (1) enables real-time, two-way voice communications; (2) requires a broadband connection from the user’s location; (3) requires Internet protocol-compatible customer premises equipment (CPE); and (4) permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network.” 47 C.F.R. § 9.3.

¹³⁰ MMTC Aug. 13, 2010 Comments, WC Docket No. 10-132 at 11.

NTIA's SBDD.¹³¹ We seek comment on whether FCC Form 477 should be filed more or less frequently.

B. Specific Categories of Data

47. Commenters have identified five categories of data that may help the Commission more effectively carry out its statutory obligations: deployment, price, subscription, service quality and customer satisfaction, and ownership and contact information. We seek comment on whether and how the Commission should collect such data, and the Commission's authority to do so.

48. Those commenting on how to collect data should be as specific as possible. Establishing detailed data reporting requirements is an inherently difficult task. Particular elements of a dataset may be simple to describe conceptually, but difficult to specify as a practical matter. Conversely, a data element may be easily specified, but difficult to explain in plain language. To the extent commenters propose that we collect specific data elements, we ask that commenters both discuss the concept and provide an actual specification of each data element. To the extent particular proposals are offered, are there different data elements that might better achieve our goals, including minimizing production burdens on filers and processing burdens on the Commission?

1. Deployment

49. As discussed above, numerous stakeholders have urged the Commission to obtain data that would allow it to understand where providers have deployed networks capable of delivering a given service. We seek comment on whether deployment data are necessary to fulfill several of the purposes discussed above: ensuring universal service by tracking the expansion of broadband networks, identifying areas that lack access to fixed or mobile broadband and assisting the Commission in targeting support to areas that most need it; monitoring telephone and broadband competition by providing insight into the service areas of potential competitors regardless of the technology used; and promoting broadband deployment and availability by providing reliable information about broadband deployment nationwide. In this section, we seek comment on how the Commission might obtain deployment data for voice and broadband services.

a. Voice Network Deployment

(i) Fixed

50. The Commission currently does not collect data on fixed voice network deployment. And although the national telephone subscription rate has remained high over the last decade,¹³² a number of commenters have informed the Commission that residents in some areas of the country—particularly rural, insular, high-cost, and Tribal areas—do not have access to basic fixed telephone service.¹³³ Other commenters assert that state carrier of last resort obligations are sufficient to ensure that fixed voice networks are ubiquitously deployed.¹³⁴ We seek comment on whether the Commission should collect fixed voice network deployment data. If such a collection is warranted, should it be limited to areas in which network deployment has historically been a concern, such as rural, insular, high-cost, and tribal areas? What geographic area (*e.g.*, census block or address-level) would be appropriate for reporting such data?

¹³¹ NCTA Aug. 13, 2010 Comments, WC Docket No. 10-132 at 11.

¹³² See INDUS. ANALYSIS & TECH. DIV., FCC, TRENDS IN TELEPHONE SERVICE (rel. Sep. 2010) at 16-17, tbl. 16.5 (showing that the percentage of occupied housing units with telephone service in the United States has ranged between 94.1% and 98.2% since 2001).

¹³³ See CommNet Wireless Dec. 16, 2010 Comments, WT Docket No. 10-208 at 6; PR Wireless et al. Dec. 16, 2010 Joint Comments, WT Docket No. 10-208 at 13, *attached to* PR Wireless Dec. 16, 2010 Comments, WT Docket No. 10-208; National Tribal Telecommunications Association Nov. 26, 2008 Comments, CC Docket No. 96-45, WC Docket No. 04-36 at 9.

¹³⁴ See, *e.g.*, Embarq Jun. 2, 2008 Reply Comments, WC Docket No. 05-337, CC Docket No. 96-45 at 4, 7.

(ii) Mobile

51. The Commission currently licenses a dataset from a commercial source, American Roamer, for data on mobile network deployment.¹³⁵ American Roamer provides coverage boundary maps for mobile voice and broadband networks based on information provided to them by mobile wireless network operators.¹³⁶ The Commission previously has noted that analysis based on this data “likely overstates the coverage actually experienced by consumers, because American Roamer reports advertised coverage as reported to it by many mobile wireless service providers, each of which uses a different definition of coverage. The data do not expressly account for factors such as signal strength, bit rate, or in-building coverage, and they may convey a false sense of consistency across geographic areas and service providers. Nonetheless, the analysis is useful because it provides a quantitative baseline that can be compared across network types, technologies, and carriers, over time.”¹³⁷

52. We seek comment on whether it is appropriate to continue relying on American Roamer’s mobile telephony deployment data. Are alternative datasets available, and if so, how do they compare to the data available to and currently purchased by the Commission? Are such datasets available only as off-the-shelf products, or would it be possible to acquire datasets tailored to the Commission’s specifications? For such datasets, what are the likely costs, and how timely is the data? Should the Commission require carriers to submit mobile telephony deployment data, notwithstanding the availability of some data from third parties? If so, what data submissions should be required? Should the Commission collect data that are based on a standardized definition of coverage or a range of signal strengths that would reflect a likely consumer experience? We also seek comment on whether the Commission should collect data on the spectrum bands used for mobile voice network deployment in specific geographic areas, which would help the Commission to fulfill its spectrum management responsibilities under Title III of the Act.¹³⁸ How burdensome would the collection of mobile telephony deployment data be for providers? What are the benefits of obtaining such information?

b. Broadband Network Deployment**(i) SBDD Data**

53. The national broadband inventory map under development by the NTIA is an important step toward collecting more robust data about broadband deployment and availability. The GAO’s report noted that stakeholders “generally agreed” that this national broadband map “would address some gaps and provide detailed data on availability, subscribership, and actual delivered speeds,” but there were concerns that the data collection mechanism used—which depends on voluntary reporting by providers to state entities whose methods may vary from state to state—could “result in inconsistent data and limit the effectiveness of the effort.”¹³⁹

54. Broadband deployment data collected via Form 477 could address these consistency concerns and provide an ongoing source of data at the conclusion of the SBDD program. Verizon, Sprint, T-Mobile, and NCTA suggest that the Commission consider the extent to which it is necessary to collect broadband deployment data through Form 477 once NTIA’s national broadband inventory map is online and the data

¹³⁵ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, WT Docket No. 09-66, Fourteenth Report, 23 FCC Rcd 11407, 11413, para. 4 (2010) (*14th CMRS Competition Report*).

¹³⁶ *Id.* at 11442, n.88.

¹³⁷ *Id.* at 11413, n.5, citing NATIONAL BROADBAND PLAN at 39.

¹³⁸ *See* 47 U.S.C. § 301 *et seq.*

¹³⁹ OCTOBER 2009 GAO REPORT, summary.

become available to the Commission.¹⁴⁰ We seek comment on this suggestion. On what data would the Commission rely at the conclusion of the SBDD program, and how would the Commission reliably analyze trends in broadband deployment if there are gaps in data collected by the SBDD program?

(ii) **Data Collection by the Commission**

55. We seek comment on a number of issues raised by commenters who recommend that the Commission collect data on broadband network deployment.

56. *Geographic Area.* Parties have proposed varying levels of geographic specificity the Commission should require when collecting deployment information.¹⁴¹ Currently, the Commission collects subscription data—which it uses as a proxy for deployment—for fixed broadband providers at the census tract level.¹⁴² In the *2008 Broadband Data Gathering Order and Further Notice*, the Commission tentatively concluded that it should measure deployment on an address-by-address basis, which would provide the most granular and accurate information.¹⁴³ A number of commenters in prior proceedings, particularly state regulatory agencies, have expressed support for collection of broadband deployment data at the address level.¹⁴⁴ These commenters note that address-by-address data would yield the most useful data for the Commission about where broadband is deployed. Some smaller providers also state that reporting at the subscriber address level would ease the burden of reporting.¹⁴⁵ Other commenters, however, have suggested that reporting address-level deployment information would be unduly burdensome for providers, particularly for small- and medium-sized providers that do not maintain such data.¹⁴⁶ We seek comment on the benefits and burdens of requiring address-level deployment data. In addition, we seek comment on how to account for areas where networks are deployed, but there are no homes or businesses

¹⁴⁰ Verizon Aug. 13, 2010 Comments, WC Docket No. 10-132 at 8; Sprint Sep. 30, 2010 Reply Comments, WC Docket No. 10-132; T-Mobile Sep. 13, 2010 Reply Comments, WC Docket No. 10-132 at 4; Connected Nation Jul. 17, 2008 Comments, WC Docket No. 07-38. *But see generally* Kentucky Municipal Utilities Association Aug. 1, 2008 Comments and Reply Comments, WC Docket No. 07-38; Consumers Union et al. Aug. 8, 2008, Further Reply Comments, WC Docket No. 07-38 at 16–19. As discussed above, the national broadband inventory map must be online no later than February 17, 2010.

¹⁴¹ Some commenters have argued that more granular data are needed. *See, e.g.*, TSTCI Aug. 1, 2008 Reply Comments, WC Docket No. 07-38 at 1. Providers generally recommend that we stay at the census tract level. *See, e.g.*, Verizon Aug. 1, 2008 Comments, WC Docket No. 07-38 at 3; Verizon Aug. 1, 2008 Reply Comments, WC Docket No. 07-38 at 3-5; AT&T Aug. 1, 2008 Reply Comments, WC Docket No. 07-38 at 2; TCA Aug. 1, 2008 Comments, WC Docket No. 07-38 at 4-5.

¹⁴² *2008 Broadband Data Gathering Order and Further Notice*, 23 FCC Rcd at 9697, para. 13.

¹⁴³ *Id.* at 9709, para. 35; Letter from Helen M. Mickiewicz, Assistant General Counsel, California Public Utilities Commission, to Marlene H. Dortch, Secretary, FCC, Aug. 19, 2008, Attach. at 10. As discussed below, we recognize that the privacy-based limitations on the government's access to customer information in both Title II of the Electronic Communications Act (ECPA), also known as the Stored Communications Act (SCA), 18 U.S.C. § 2701 *et seq.*, and the privacy provisions of Cable Act, 47 U.S.C. § 551 *et seq.*, may be implicated by collection of address-level subscribership data. *See* Section V.C, *infra*. However, a request for address-level deployment information would not seek customer information, but only information about the services a provider can provide on an address-by-address basis. As such, we do not believe that address-level collection of deployment information would implicate the privacy provisions of those acts.

¹⁴⁴ *See, e.g.*, Maine Public Utilities Commission July 16, 2008 Comments, WC Docket No. 07-38 at 1; New Jersey Division of Rate Counsel Jul. 17, 2008 Comments, WC Docket No 07-38 at 12.

¹⁴⁵ *See, e.g.*, APPA *et al.* Jul. 17, 2008 Comments, WC Docket No. 07-38 at 3.

¹⁴⁶ Windstream Jul. 17, 2008 Comments, WC Docket No. 07-38 at 2; Verizon Jul. 17, 2008 Comments at 2; Connected Nation July 17, 2008 Comments, WC Docket No. 07-38 at ii-iii; ITTA Jul. 17, 2008 Comments, WC Docket No. 07-38 at 4.

with addresses (*e.g.*, uninhabited highways with mobile network coverage).¹⁴⁷ At least one state (California) already requires address-level reporting for the construction of its broadband map.¹⁴⁸ We seek comment on this and similar state agency initiatives and request any empirical evidence of the burdens and impact of compliance.

57. Some commenters in prior proceedings have suggested that the Commission collect deployment data at the census block level.¹⁴⁹ The California Public Utility Commission (PUC) notes that reporting by census block would yield an average of 22 households, whereas a census tract yields an average of 1,628 households.¹⁵⁰ Census block-level reporting could provide a balance between being more granular than census tract-level reporting and avoiding any privacy issues associated with address-by-address reporting. Commenters have also noted that the utilization of a Census geography facilitates the application and analysis of Census demographic data, such as income, race, age, and household size and composition.¹⁵¹ We seek comment on whether the burdens imposed by collecting census block-level data are significantly greater than those associated with collecting census tract-level data. Would the burdens imposed by collecting census block-level data be substantially greater than requiring address-level reporting?¹⁵² Are there particular benefits to using census-block level reporting? What were the costs and benefits of initiatives that have used census block-level reporting?¹⁵³ What alternative reporting methods could the Commission use to ease the burden on carriers that might find census block-level data to be unduly burdensome, while still collecting comparable and useful data?¹⁵⁴

58. NTIA's broadband mapping effort sought deployment data for a smaller geographic area than a census block for census blocks larger than two square miles.¹⁵⁵ We seek comment on the benefits and costs

¹⁴⁷ The challenges of assigning mobile services to particular geographic areas is discussed more fully in para. 61, *infra*.

¹⁴⁸ California Public Utilities Commission Aug. 1, 2008, Reply Comments, WC Docket No. 07-38 at 4-5.

¹⁴⁹ See Letter from Helen M. Mickiewicz, Assistant General Counsel, California Public Utilities Commission, to Marlene H. Dortch, Secretary, FCC, Aug. 18, 2008, Attach. at 8.

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² See, *e.g.*, OPASTCO-RICA Nov. 24, 2008 Paperwork Reduction Act Comments, WC Docket No. 07-38, OMB Control No. 3060-0816.

¹⁵³ See, *e.g.*, Connected Nation: Broadband Mapping FAQ: *What types of data are required for the broadband mapping project?*, http://connectednation.org/mapping/broadband_mapping_FAQ.php ("The dataset includes layers outlined in the technical appendix of the NOFA, such as broadband service availability by Census Block for those Census Blocks with an area of no greater than two square miles, broadband service availability by road segment in those Census Blocks larger in area than 2 square miles, and the footprint of wireless service providers (including fixed wireless, mobile wireless, and satellite).").

¹⁵⁴ For its mapping initiative, the California PUC provided the following format alternatives: 1) a list of all addresses, in a parsed address field format, with available broadband within the provider's service area; 2) a list of all addresses in a concatenated-address field format, with available broadband within the provider's service area, according to certain specifications; and 3) a GIS or CADD data file (an ESRI shapefile or personal geodatabase, or Autodesk AutoCAD DWG file, or Bentley Microstation DGN file), with available broadband within the provider's service area only if such areas are delineated by CBTF Speed as city blocks or smaller areas, according to certain specifications. California Public Utilities Commission Aug. 1, 2008, Reply Comments, WC Docket No. 07-38 at 4-5 (citations omitted).

¹⁵⁵ Michael Byrne, *Geographic Information Officer, FCC, National Broadband Map Update, Presentation for the Federal Geographic Data Committee*, at 4 (Dec. 10, 2010), available at <http://www.fgdc.gov/ngac/meetings/december-2010/national-broadband-map-update.ppt#259,1,Slide 1>. See also Connected Nation: Broadband Mapping FAQ: *What types of data are required for the broadband mapping project?*, http://connectednation.org/mapping/broadband_mapping_FAQ.php (last visited Jan. 6, 2011) ("The dataset includes (continued....)")

of this approach. What unit of measurement should the Commission utilize for larger census blocks if the Commission does not use address-by-address reporting?

59. *Speed.* The National Broadband Plan noted the importance of speed data to consumers and policymakers, and stakeholders generally acknowledge its usefulness.¹⁵⁶ The Commission currently collects information about advertised broadband speeds in its Form 477 collection. The National Broadband Plan noted, however, that consumers and policymakers would benefit from data on actual speeds.¹⁵⁷ The Commission has sought information about how best to measure actual broadband speeds.¹⁵⁸ Recognizing the difficulty of measuring actual speeds, a number of stakeholders have nonetheless urged the Commission to require providers to report actual speeds.¹⁵⁹ Some have suggested that the Commission require providers to report a statistical sampling of average speeds.¹⁶⁰ Others have suggested requiring providers to report data contention ratios (the ratio of the potential maximum demand to the actual bandwidth available).¹⁶¹ Broadband providers and their industry associations have argued that actual speeds are affected by a wide variety of factors, many beyond the providers' control, and that measuring speed will be "almost impossible."¹⁶² We seek comment on whether the Commission should collect data on contention ratios or some other measure of network congestion. We further seek comment on whether the Commission should continue to collect data only on advertised speeds, or whether, for example, providers should provide information about actual speeds by geographic area, or speeds that extend beyond the access network (e.g., end-to-end speeds that reflect an end user's typical Internet performance). We also seek comment on how to best measure the actual speeds of services that can be provided over a network. The Commission has undertaken a program to measure such speeds directly for a sample of end users of fixed broadband, and is considering a similar program for mobile broadband.¹⁶³ We seek comment on whether an approach like this one, a similar approach with more measurements, or some other method is appropriate. Comments on measurements of actual speed should identify the part or parts of the network where speed

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layers outlined in the technical appendix of the NOFA, such as broadband service availability by Census Block for those Census Blocks with an area of no greater than two square miles, broadband service availability by road segment in those Census Blocks larger in area than 2 square miles, and the footprint of wireless service providers (including fixed wireless, mobile wireless, and satellite).").

¹⁵⁶ See NATIONAL BROADBAND PLAN at 43; see also Free Press Aug. 13, 2010 Comments, WC Docket No. 10-132 at 5.

¹⁵⁷ NATIONAL BROADBAND PLAN at 43.

¹⁵⁸ For example, the Commission has begun an effort, in partnership with broadband providers and SamKnows, to measure the actual speed and performance of broadband service. See *Comment Sought on Residential Fixed Broadband Services Testing and Measurement Solution, Pleading Cycle Established*, Public Notice, 25 FCC Rcd 3836 (2010) (SamKnows project); *Comment Sought on Measurement of Mobile Broadband Network Performance and Coverage*, Public Notice, 25 FCC Rcd 7069 (2010) (same).

¹⁵⁹ See, e.g., National Assoc'n of State Utility Commissioners and New Jersey Rate Counsel Jul. 17, 2008 Comments, WC Docket No. 07-38 at 16-18; Consumers Union et al. Aug. 8, 2008 Further Reply Comments, WC Docket No. 07-38 at 17; National Association of Telecommunications Officers and Advisors Jul. 17, 2008 Comments, WC Docket No. 07-38 at 4.

¹⁶⁰ See National Association of Telecommunications Officers and Advisors Jul. 17, 2008 Comments, WC Docket No. 07-38 at 4.

¹⁶¹ The higher the contention ratio, the greater the number of users that may be trying to use the actual bandwidth at any one time and, therefore, the lower the effective bandwidth or speed offered, especially at peak times. See Consumer Federation of America Sept. 2, 2008 Further Reply Comments, WC Docket No. 07-38 at 17.

¹⁶² See, e.g., Sprint Aug. 1, 2008, Comments and Reply Comments WCB Docket No. 07-38 at 3; American Cable Assoc'n Jul. 17, 2008 Comments, WCB Docket No. 07-38; CTIA Aug 1, 2008 Comments, WCB Docket No. 07-38 at 2; Frontier Aug. 1, 2008 Comments, WCB Docket No. 07-38 at n.4.

¹⁶³ See *supra* n.158.

should be measured. What starting and ending points are most relevant for consumers, providers, and the Commission?

60. The Commission currently collects speed data in eight tiers of advertised download speeds and nine tiers of advertised upload speeds, leading to 72 possible combinations.¹⁶⁴ The SBDD established nine tiers of advertised download speeds and 11 tiers of advertised upload speeds, for 99 possible combinations.¹⁶⁵ We seek comment on whether the FCC and NTIA should conform their speed tiers.¹⁶⁶ Further, while there is value in having speed data broken out at a granular level, relevant speeds are likely to evolve over time, and having 72 or 99 speed-tier combinations may be unnecessarily complex. However, we note that there are benefits to maintaining some continuity in this area to enable tracking data on particular speed-tier combinations over time. Further, measuring the same speed tiers for both business and residential customers may not be appropriate, as they often have different needs for speed. When collecting speed data, should the Commission reduce the number of speed tiers reported by providers? Should we add a tier specifically tied to any speed benchmark that may be required to receive USF or Connect America Fund (CAF) funding?¹⁶⁷ Should any future increase in that potential benchmark result in the addition of a speed tier for that new speed? An alternative approach would be to define tiers by pairs of upstream and downstream speeds.¹⁶⁸ Such an approach would greatly reduce the number of tiers but would lock-in pairings of downstream and upstream speeds. We seek comment on these approaches, including comment on the number of speed tiers and breakpoints.

61. *Mobile Issues.* Mobile broadband presents additional challenges with respect to geography. We seek comment on whether a mobile service should be treated differently from a fixed service for reporting purposes. For mobile service, a billing address can provide a subscriber's home location but does not reflect the entire coverage area where a mobile broadband network is available; nor would a billing address necessarily be reflective of the primary usage area of the subscriber, particularly in the case of family plans and for businesses. As discussed above, American Roamer produces mobile voice and broadband coverage maps, which the Commission has used to estimate mobile broadband deployment at the census block level. However, these coverage maps have certain drawbacks, including that the data do not account for factors such as signal strength variations. Should the Commission collect some measure of signal strength beyond a simple "signal/no signal" flag? For example, would a "good/better/best" measure for each geographic area be appropriate, or would reported advertised speeds accurately reflect the impact of signal strength? How should reporting account for the variability of signal strength and capacity in a network that includes mobile users? We seek comment on whether billing address, census blocks, or another geographic area should be used to collect data on mobile broadband network coverage areas, separate from the maps obtained from American Roamer. In addition, Sprint has stated it has maps that would allow for the identification of service availability at the street address level, and has suggested that the Commission request such data on a trial basis from providers that currently produce such maps.¹⁶⁹ We

¹⁶⁴ We utilize the subscription speed data framework in the current Form 477 program to provide a starting point for our discussion of collecting deployment speed data. Current breakpoints for reporting advertised subscription speed are at 200 kbps, 768 kbps, 1.5 Mbps, 3 Mbps, 6 Mbps, 10 Mbps, 25 Mbps, and 100 Mbps. See <http://www.fcc.gov/Forms/Form477/477inst.pdf>; FCC 08-89 at para. 20.

¹⁶⁵ The SBDD breakpoints for reporting speed are at 200 kbps, 768 kbps, 1.5 Mbps, 3 Mbps, 6 Mbps, 10 Mbps, 25 Mbps, 50 Mbps, 100 Mbps, and 1 Gbps. See NOFA Technical Appendix A.

¹⁶⁶ See, e.g., NCTA Aug. 13, 2010 Comments, WC Docket No. 10-132 at 11.

¹⁶⁷ *USF/ICC Transformation NPRM* at paras. 108-109.

¹⁶⁸ For example, tier one would be speeds of less than 4 Mbps downstream and 1 Mbps upstream; tier two would be $4 \text{ Mbps} \leq x < 10 \text{ Mbps}$ downstream and $1 \text{ Mbps} \leq y < 3 \text{ Mbps}$; tier 3 would be $10 \text{ Mbps} \leq x < 25 \text{ Mbps}$ downstream and $3 \text{ Mbps} \leq y < 10 \text{ Mbps}$; tier 4 would be $25 \text{ Mbps} \leq x < 100 \text{ Mbps}$ downstream and $10 \text{ Mbps} \leq y < 50 \text{ Mbps}$; and tier 5 would be $x \geq 100 \text{ Mbps}$ downstream and $y \geq 50 \text{ Mbps}$ upstream.

¹⁶⁹ Sprint Nextel Jul. 17, 2008 Comments, WC Docket No. 07-38 at 2.

seek comment on conducting such a trial.

62. One carrier argues that mobile wireless providers should not be required to report speed data because of the difficulty of measuring factors that can affect mobile data transfer rates.¹⁷⁰ We seek comment on whether we should collect data on mobile connection speed, and whether fixed and mobile services should be treated differently when reporting speed data. In addition we seek comment on the extent to which data from the Commission's mobile broadband speed test could be meaningful in evaluating mobile data transfer rates.¹⁷¹

63. *Spectrum Issues.* We seek comment throughout this Notice on several issues concerning spectrum usage data, which would help the Commission to fulfill its spectrum management responsibilities under Title III of the Act.¹⁷² How can the Commission best collect such information? Possible methods include requiring providers to indicate the band, radio service code, or call sign used to provide service.

64. *Satellite Issues.* We seek comment on how best to collect deployment data about satellite-based services. At least one satellite provider has pointed out the near-ubiquity of satellite signals.¹⁷³ Should the Commission exempt satellite broadband providers from reporting deployment information, or require only that satellite providers report areas where terrain or other impediments are likely to block line of sight to the satellite?

65. *Anchor Institutions.* Anchor institutions such as schools, libraries, or hospitals often require broadband offerings with quality of service guarantees not required by at least some retail customers, and section 254 of the Act places particular emphasis on educational providers, libraries, and health care providers for rural areas.¹⁷⁴ We seek comment on whether to treat anchor institutions like other businesses or whether they should be treated as a different category for the purposes of measuring deployment.

2. Price

66. We seek comment on whether price data are necessary to fulfill several of the purposes discussed above, including ensuring universal service by determining whether rural consumers are paying affordable and reasonably comparable rates to those in urban areas; monitoring telephone and broadband competition (e.g., in forbearance proceedings) by providing data regarding the effect, if any, of competition on pricing or by determining whether nominally competitive providers in fact have comparable offerings in the market; reporting a comparison of U.S. and international prices for broadband service capability; and promoting broadband deployment and availability.

67. The Commission previously has considered whether to use Form 477 to collect price information. In the *1999 First Section 706 Report*, for example, the Commission sought suggestions on how to measure market demand through “indicia [such] as prices [and] willingness to pay.”¹⁷⁵ In the *2008 Broadband Data Gathering Order and Further Notice*, the Commission sought comment on whether to require providers to report the monthly price charged for stand-alone broadband service.¹⁷⁶

68. Some commenters have argued that broadband providers should not be required to submit price information because prices are competitive; bundled offerings, temporary discounts, different pricing plans, and other service attributes make comparing pricing complex; the production of pricing data is too

¹⁷⁰ T-Mobile Aug. 13, 2010 Comments, WC Docket No. 10-132 at 5.

¹⁷¹ See FCC, CONSUMER BROADBAND TEST (BETA), <http://www.broadband.gov/qualitytest/about/>.

¹⁷² See 47 U.S.C. § 301 *et seq.*

¹⁷³ Hughes Network Systems Jul. 17, 2008 Comments, WC Docket No. 07-38 at 5.

¹⁷⁴ 47 U.S.C. § 254(h)(1)(A)-(B).

¹⁷⁵ *1999 First Broadband Deployment Report*, 14 FCC Rcd at 2410, para. 31.

¹⁷⁶ *2008 Broadband Data Gathering Order and Further Notice*, 23 FCC Rcd at 9711, para. 11.

burdensome; and requiring the production of price data would impose Title II burdens on broadband providers.¹⁷⁷

69. Others, however, have urged the Commission to require broadband and voice providers to report price information to assess competition,¹⁷⁸ determine whether prices are reasonably comparable in different demographic areas,¹⁷⁹ inform our USF distribution mechanism,¹⁸⁰ and to assess why consumers may not be purchasing broadband where it is available.¹⁸¹ Such commenters have emphasized the need for the Commission to collect the actual price of broadband services to, for example, allow consumers to compare service prices.¹⁸² Proposals on how to collect price data have varied widely, however, in substance and level of detail. For example, some state regulators have urged the Commission to collect price information for stand-alone and bundled services, and not to consider promotional prices or short term deals.¹⁸³ Some have urged the Commission to collect a measure of “price per megabit per second.”¹⁸⁴ Others have urged the Commission to collect “information from commercial carriers regarding their tier pricing, credit and deposit requirements across various communities.”¹⁸⁵ Commenters also have proposed a variety of geographic areas for reporting price,¹⁸⁶ and a variety of reporting periods.¹⁸⁷

70. We seek comment on the Commission’s legal authority to collect price data, whether we should use Form 477 to collect price data, and if so, how we should collect and analyze such data. We acknowledge that there are a number of challenges associated with any approach to collecting price information. We therefore seek detailed comment on the strengths and weaknesses of the approaches we describe below, and on other possible approaches.

¹⁷⁷ See, e.g., AT&T Aug. 1, 2008 Comments, WCB Docket No. 07-38 at 12-13; ITTA Aug. 1, 2008 Comments, WCB Docket No. 07-38 at 4.

¹⁷⁸ See, e.g., State of Illinois Sept. 2, 2008 Reply Comments, WB Docket No. 07-38 at 4; NASUCA and New Jersey Rate Counsel Sept. 2, 2008 Reply Comments, WB Docket No. 07-38 at 26; Consumer Federation of America, Free Press and Public Knowledge Sept. 2, 2008 Reply Comments, WB Docket No. 07-38 at 5.

¹⁷⁹ See, e.g., State of Illinois Sept. 2, 2008 Reply Comments, WB Docket No. 07-38 at 5.

¹⁸⁰ See, e.g., NASUCA and New Jersey Rate Counsel Sept. 2, 2008 Reply Comments, WB Docket No. 07-38 at 26; Consumer Federation of America, Free Press and Public Knowledge Sept. 2, 2008 Reply Comments, WB Docket No. 07-38 at 5.

¹⁸¹ See, e.g., CWA Jul. 17, 2008 Comments, WB Docket No. 07-38 at 3; Consumer Federation of America, Free Press and Public Knowledge Sept. 2, 2008 Reply Comments, WB Docket No. 07-38 at 5.

¹⁸² See, e.g., New America Foundation Aug. 13, 2010 Comments, WC Docket No. 10-132, attach. at 6; CWA Jul. 17, 2008 Comments, WB Docket No. 07-38 at 9.

¹⁸³ See, e.g., People of the State of Illinois Sep. 2, 2008 Reply Comments, WCB Docket No. 07-38 at 6; NASUCA Sep. 2, 2008 Reply Comments, WCB Docket No. 07-38 at 19; New Jersey Division of Rate Counsel Aug. 1, 2008 Comments, WCB Docket No. 07-38 at 13; New American Foundation Aug. 13, 2010 Comments, WC Docket No. 10-132 at 6.

¹⁸⁴ See, e.g., Consumer Federation of America *et al.* Sep. 2, 2008 Further Reply Comments, WC Docket No. 07-38 at 8.

¹⁸⁵ MMTTC Aug. 13, 2010 Comments, WC Docket No. 10-132 at 13. We note that credit and deposit requirements may affect consumer purchase decisions, and hence adoption rates, by different amounts in different communities. Subscription data would be required to capture such effects.

¹⁸⁶ Hughes Network Systems July 17, 2008 Comments, WC Docket No. 07-38 at 4, 7-8 (suggesting national price reports, if reports are required); ACA Comments in WC Docket No. 07-38 at 13 (July 17, 2008) (suggesting statewide reporting, if reporting is required).

¹⁸⁷ Hughes Network Systems July 17, 2008 Comments, WC Docket No. 07-38 at 4, 7-8 (suggesting monthly price reports, if reports are required); MMTTC Comments in WC Docket No. 10-132 at 13 (Aug. 13, 2010) (suggesting semi-annual reports).

71. Price data can be collected in many different way. For example, the Commission could collect retail prices charged by providers for basic voice and broadband offerings.¹⁸⁸ Given the complexity and variety of bundles and discounts, the Commission could instead define a basket of services and collect, or require providers to post publicly, the price of that basket.¹⁸⁹ Alternatively, the Commission could collect information about all available prices and packages, or seek to determine effective prices that end users pay.

72. Another approach would be to have providers report the total revenue associated with all offerings (including voice, video (*i.e.*, pay television), and broadband Internet access services), and identify the attributes associated with that revenue, such as the types of services provided (*e.g.*, voice, video, and broadband) and key descriptors of those services (*e.g.*, basic video, extended video, very high speed Internet access). The Commission could then determine the average effective price for each attribute in a given area by performing statistical analysis on aggregate revenue and attribute data across areas large enough to generate a significant number of measurements. We seek comment on whether such an approach would yield meaningful results for the purposes outlined above. We also seek comment on how this approach might be specified. For example, how many and what attributes would be needed to support a useful analysis? Given that resolving the price for more attributes will require more measurements of total revenue, how should the number and selection of attributes be balanced against the geographic size of the measurement, given that a sufficiently large sample size for a larger number of attributes will require more measurements and a larger geographic area? Should revenue be inclusive or exclusive of taxes and fees? Should revenue be reported separately for business and residential customers?

73. We note that the Commission has sought comment on the need for price data to set benchmarks in the context of our intercarrier compensation and universal service proceedings.¹⁹⁰ Would any of these approaches provide data suitable for the establishment of such benchmarks, or are more appropriate data available from other sources?

74. If the Commission collects price data, over what geographic area should prices be collected? As discussed in Section V.C below, ECPA may limit the Commission's ability to require providers to report price data from service providers at the household or address level.¹⁹¹ Should the Commission collect price data at the census block level? Could the Commission collect data using, for example, street segments as the collection geographic area? If so, would it need to guard against collecting single home street segments? How could it do so? What impact would different geographic-level collections have on the value of the data produced? Would collecting data at a more granular level that is consistent with the restrictions imposed by ECPA (*e.g.*, at the street-segment level) materially improve the quality of the analysis and justify the added complexity of the collection?

75. Were we to collect pricing data for mobile services, how should prices for mobile services be assigned to a geographic area? Assigning a fixed service subscriber to a single census block is a relatively simple process that providers currently use to provide subscribership data at the census-tract level.¹⁹² Assigning price data for mobile services to a geographic area, however, is less straightforward, particularly in light of the billing address issues related to mobile addressed above. Should providers of mobile services use the billing address as the customer's location, and report data for that customer in the corresponding census block? For those that suggest mobile services do not have any inherent location, how should the Commission evaluate substitution of fixed service by mobile?¹⁹³ How should the Commission account for

¹⁸⁸ The California Broadband Task Force conducted such a survey in 2007. *See* Advertised Broadband Price and Speed Survey, available at http://www.cio.ca.gov/broadband/xls/CBTF_PricingSurvey_2007.xls.

¹⁸⁹ *See, e.g.*, OECD Communications Outlook 2009 at 268-274, available at www.oecd.org/sti/telecom/outlook.

¹⁹⁰ *See, e.g.*, USF/ICC Transformation NPRM at paras. 139-147, 573-578.

¹⁹¹ *See* Section V.C, *infra*.

¹⁹² We note that the Commission provides tools to assist with this process. *See* <http://fcc.gov/developer>.

¹⁹³ NATIONAL BROADBAND PLAN at 42.