DEPARTMENT OF BUSINESS AND ECONOMIC DEVELOPMENT
and
PUBLIC SERVICE COMMISSION OF MARYLAND

Report on
The Status of the Deployment of Internet Protocol-enabled Services, Including VoIP Services, in Maryland and the Status of any Federal Legislation or Regulatory Proceedings Before the Federal Communications Commission Relating to Internet Protocol-enabled Services

Issued June 2012

Prepared for
the Senate Finance Committee and
the House Economic Matters Committee
of the Maryland General Assembly

In Compliance with Section 8-602 of
the Public Utilities Article
Annotated Code of Maryland

Executive Summary

Background and legislative history

Chapters 580 and 581, Acts 2007 (Senate Bill 864 and House Bill 1379, respectively), codified as Public Utilities Article §§ 8-601 and 8-602 defined voice over Internet protocol service ("VoIP Service")[1] and delineated the jurisdiction of the Public Service Commission of Maryland ("Commission") over such service. Specifically, the legislature determined that "the Commission does not have jurisdiction over the regulation of VoIP service, including the imposition of regulatory fees, certification requirements, and the filing or approval of tariffs." Section 8-602 of the Public Utilities Article neither required nor prohibited the assessment of 9-1-1 fees, telephone relay service fees, application of switched network access rates or other intercarrier compensation rates. In addition, Chapters 580 and 581, Acts 2007 specifically did not exempt companies that are subject to Public Utilities Article § 8-201 from the obligation to provide telephone lifeline service, nor did it exempt any VoIP service from state and federal laws pertaining to public safety, consumer protection, or unfair and deceptive trade practices. Significantly, Public Utilities Article § 8-602(c) require that a carrier that migrates a customer from a tariffed telecommunications service to VoIP service must notify the customer that the Commission does not have jurisdiction over VoIP service. Section 8-602(c) also direct that complaints pertaining to VoIP services may be filed with the Division of Consumer Protection in the Office of the Attorney General.

Section 3, chs. 580 and 581, Acts 2007 provided:

> That on or before December 1, 2010, the Department of Business and Economic Development and the Public Service Commission with input from the Office of the Attorney General and other appropriate agencies as necessary, shall report to

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[1] § 8-601."Voice over Internet Protocol Service" defined.
In this subtitle:
(1) "voice over Internet protocol service" or "VoIP service" means any service that:
(i) enables real-time two-way voice communications that originate from or terminate to the subscriber end user's location requiring Internet protocol or any successor protocol to Internet protocol; and
(ii) requires a broadband connection from the user's location; and
(2) "voice over Internet protocol service" or "VoIP service" includes any such service that permits users generally to receive calls that originate on the public switched telephone network and to terminate calls to the public switched telephone network.
[2007, chs. 580, 581.]
This definition is substantially that same as the FCC's definition (See 47 CFR § 9.3) of Interconnected VoIP service:
An interconnected Voice over Internet protocol (VoIP) service is 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.

the General Assembly, in accordance with § 2-1246 of the State Government Article, on the status of the deployment of Internet Protocol-enabled services, including VoIP services, in Maryland and the status of any federal legislation or regulatory proceedings before the Federal Communications Commission relating to Internet Protocol-enabled services.

This report is a joint product of the Department of Business and Economic Development and the Public Service Commission, and has been developed with input from the Office of the Attorney General. Delivery of VoIP service and other IP-enabled services requires access to a broadband Internet connection. Consequently, the number of VoIP service customers and the number of subscribers to other IP-enabled services is limited by the number of broadband connections that exist at any point in time. For that reason, this report first reviews the status of the deployment of Internet Protocol-enabled services in Maryland by examining the availability of broadband Internet connections in the State. Data on the level of broadband Internet connections and VoIP service subscriptions in Maryland is readily available from various FCC reports. The second part of the report reviews relevant federal legislation and regulatory proceedings related to Internet Protocol-enabled services including VoIP services.

Status of the Deployment of IP-enabled Services, Including VoIP Services, in Maryland

The most recent data available (through December 2009), indicates that Maryland citizens subscribed to 2,876,000 broadband connections of which 1,231,000 were wireless, while the remaining 1,645,000 were landline connections using various technologies. Digital subscriber line technology (DSL) accounted for 425,000 or 26 percent of the broadband landline connections in the state while cable modem service accounted for 796,000 or 48 percent of all broadband landline connections in the State.

Based on the most recent data available, there are 437,000 VoIP subscribers in Maryland. This number of VoIP subscribers represents almost 13 percent of the total number of access lines in the State and means that 15 percent of the broadband Internet connections in the state are actually used for voice service. Almost all of those VoIP connections are provided by a large number of service providers other than the incumbent telephone companies or their affiliates.[2] Moreover, the data indicates that a large part of the State's VoIP connections are provided to residential customers.

Overall, the most recent data available indicate that the evolution of the telephone industry from the traditional circuit-switch based service to Internet Protocol-based service has resulted in a much wider range of providers from which both business and residential customers can purchase voice communications and other services.

[2] Maryland's two incumbent local exchange carriers are Verizon Maryland Inc. and Armstrong Telecommunications, Inc. The names of entities providing broadband connections and VoIP subscriptions are not provided in the FCC's reports.

In addition to the deployment of broadband services and the number of VoIP subscriptions in Maryland, this report examines data pertaining to complaints filed by customers at the Consumer Protection Division (CPD) of the Office of the Attorney General and at the Office of External Relations (OER) of the Public Service Commission of Maryland. Customer complaint data assembled by those complaint intake offices indicate that 203 discrete customer complaints pertaining to VoIP and broadband Internet access were filed during the 2007-2010 period.

Status of Federal Legislation and Regulatory Proceedings Before the FCC

With the issuance of its IP-enabled Service Notice of Proposed Rulemaking in 2004, the FCC began a process of extending to interconnected VoIP services many of the consumer protections that historically applied to traditional telephone service. Those consumer protections have been extended to interconnected VoIP services and to providers of those services by the FCC pursuant to its authority under Title I of the Communications Act as amended on the basis that, in the FCC's opinion, VoIP was becoming a close substitute for traditional services. As a result of the FCC's investigations and subsequent orders since 2004, the following consumer protections have been applied to VoIP services and providers of those services:

- E911 requirements,
- electronic surveillance capability,
- universal service funding obligations,
- interconnection rights and responsibilities,
- protection of customer proprietary network information,
- access by persons with disabilities,
- imposition of regulatory fees,
- access to telephone numbering resources and implementation of number portability,
- data gathering, and
- service discontinuance notification requirements.

In addition to the above-mentioned FCC proceedings, several significant legislative measures have been adopted which bear on IP-enabled services including VoIP services. Particularly noteworthy is the passage of the American Recovery and Reinvestment Act in 2009, which provided several additional sources of funding to promote the deployment of broadband availability in unserved areas and which has been the basis for the development of a strategic roadmap at the FCC. That roadmap--the National Broadband Plan--was developed to facilitate and promote the deployment of broadband capabilities and has already resulted in several significant policy modifications including relaxation of some restrictions on the use of School and Library universal service fund investments and pole attachment rates, and other measures.

This section of the report provides a summary of the FCC proceedings and federal legislation that most directly bear on the status of IP-enabled services including VoIP services.

The Status of the Deployment of Internet Protocol-Enabled Services, Including VoIP Services, in Maryland

Status of the Deployment of IP-Enabled Services in Maryland[3]

According to the FCC's most recent Broadband Report,[4] Maryland had 2,876,000 broadband connections as of December 2009, of which 1,231,000 were wireless and 1,645,000 were landline connections using various technologies.[5] Broadband landline connections consist primarily of DSL or cable modem service. DSL accounted for 425,000 broadband connections or 26 percent of all landline broadband connections and cable modem service accounted for 796,000 landline broadband connections or 48 percent of all landline broadband connections in the State.[6] While the number of fiber-based and satellite-based broadband connections were not reported in order to preserve the confidentiality of the provider, it can be determined that there were 424,000 of those types of broadband connections, or 26 percent of the total as of December 31, 2009.[7] Table 23 of the December 2010 Broadband Report indicates that landline broadband connections were available in Maryland from a wide variety of Internet providers using various Internet access technologies. Specifically, the December 2010 Broadband Report lists 19 separate providers of DSL-based broadband service, 12 cable modem service providers and 13 fiber-based providers.[8]

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[3] The FCC defines IP-enabled services as those

> "services and applications relying on the Internet Protocol family. IP-enabled 'services' could include the digital communications capabilities of increasingly higher speeds, which use a number of transmission network technologies, and which generally have in common the use of Internet Protocol. … IP-enabled 'applications' could include capabilities based in higher-level software that can be invoked by the customer or on the customer's behalf to provide functions that make use of communications services."

In the Matter of IP-Enabled Services, WC Docket No. 04-36, Notice of Proposed Rulemaking, adopted February 12, 2004, released March 10, 2004, footnote 1. (IP-Enabled Services NOPR).

[4] Internet connections that provide data transfer rates of at least 200 kilobits per second in at least one direction are defined by the FCC as broadband. See *Internet Access Services: Status as of December31, 2009*, Industry Analysis and Technology Division, Wireline Competition Bureau, December, 2010, page 1 (December 2010 Broadband Report), Available at: http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db0902/DOC-301294A1.pdf

[5] December 2010 Broadband Report, Table 18.

[6] December 2010 Broadband Report, Table 18.

[7] Data provided in Table 18 of the December 2010 Broadband Report indicate that there were 1,645,000 total landline broadband connections of which 425,000 were DSL-based and 796,000 were cable modem based. Therefore the combined total for fiber-based and satellite-based broadband connections is 424,000. (1,645,000 – 425,000 – 796,000 = 424,000).

[8] December 2010 Broadband Report, Table 23. The number of DSL-based providers was calculated by subtracting from the total number of broadband providers (59), the number of providers using mobile wireless (7), fixed wireless (8), fiber (13), and cable modem technologies (12).

The number of broadband connections in Maryland rose from 2,474,000 to 2,876,000 or by 16.25 percent during the second half of 2009.[9] The vast majority of that increase of 402,000 broadband connections was attributed to the increase in the number of wireless broadband connections. During the second half of 2009, wireless broadband connections increased from 859,000 connections to 1,231,000 connections. That change represents an increase of 372,000 wireless broadband connections or 43.31 percent. During the second half of 2009, the recorded number of landline broadband connections rose from 1,615,000 to 1,645,000 for a total change of 30,000 connections, which represents a 3.75 percent change. That relatively small change in landline connections during the second half of 2009 masks the substitution of fiber-based and satellite-based connections for DSL-based connections. During the second half of 2009, broadband connections based on DSL technology fell by 34,000 (from 459,000 to 425,000) while the number of broadband connections based on fiber and satellite technology rose from 374,000 to 424,000 or by 50,000 connections.

While in its most recent Broadband Access Report, the FCC determined that "broadband deployment to *all* Americans is not reasonable and timely," its analysis revealed no geographic area in Maryland that lacked broadband Internet access.[10] On that basis, one can conclude that there is no geographic area in Maryland that lacks access to VoIP service.

Residential Sector

Of the total number of broadband connections in Maryland at year-end 2009 (including wireless connections), 2,330,000 served residential customers, thus indicating that there were 1.11 residential broadband subscriptions in Maryland for each occupied housing unit at year-end 2009.[11] The number of residential broadband connections grew by 286,000, or 14 percent from 2,044,000 at June 30, 2009 to 2,330,000 at December 31, 2009. Excluding wireless broadband connections, Maryland reported 1,538,000

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[9] The FCC's initial Broadband Report was issued in September 2010 and measured broadband connections as of June 30, 2009. See *Internet Access Services: Status as of June 30, 2009*, Industry Analysis and Technology Division, Wireline Competition Bureau, September, 2010. Table 14.

[10] *In the Matter of 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* and *A National Broadband Plan for Our Time,* Sixth Broadband Deployment Report, GN Docket No. 09-137 and 09-51, adopted July 16, 2010, released July 20, 2010, paragraph 2 (emphasis in the original) and Appendix B (Broadband Access Report).

[11] December 2010 Broadband Report, Table 17. According to the U.S. Census Bureau, Maryland had 2,086,828 occupied housing units in 2008. Consequently, it can be calculated that there are approximately 111 residential broadband connections for every 100 occupied housing unit. (2,330,000 / 2,086,828 = 1.1170 = 111.70 percent). See http://factfinder.census.gov/servlet/ACSSAFFFacts?_event=Search&_lang=en&_sse=on&geo_id=04000US24&_state=04000US24

residential landline broadband Internet connections as of December 31, 2009.[12] This represents a landline broadband penetration rate of approximately 74 percent.[13] Residential landline broadband connections grew by 26,000 connections or by 1.72 percent during the second half of 2009. The number of residential wireless broadband connections rose by 260,000 wireless connections or 48.87 percent from 532,000 on June 30, 2009 to 792,000 at year-end 2009. At year-end 2009, a residential wireless broadband subscription rate of approximately 38 percent can be calculated from data provided in the FCC's December 2009 Broadband Report.[14]

The FCC's data also indicated that 75 percent of the residential telephone access lines in Maryland were DSL capable and that 95 percent of homes served by cable television companies were cable modem ready.[15] Similar data on the availability of satellite-based broadband service is not available.

Business Sector

The FCC's most recent data indicated that there were 546,000 broadband connections (including wireless) to business customers in Maryland.[16] Based on this data, it can be estimated that there are roughly 103 broadband Internet connections per 100 businesses in Maryland.[17] That figure is a rough estimate and does not account for the number of separate business offices or locations in the State. Moreover, the FCC's data does not indicate the proportion of broadband Internet connections sold to businesses in Maryland that were wireline connections. The number of broadband Internet connections sold to

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[12] December 2010 Broadband Report, Table 16.

[13] December 2010 Broadband Report, Table 16. The penetration rate is calculated by dividing the number of landline broadband connections sold to residential customers by the number of occupied housing units in the State. (1,538,000 / 2,086,828 = .7373 = 73.73%). The calculated penetration rate figure of approximately 74% is confirmed by the 70% figure estimated by the National Telecommunications and Information Administration. (See http://www.ntia.doc.gov/reports/2010/ESA_NTIA_US_Broadband_Adoption_Report_11082010.pdf) and by the FCC's fixed broadband subscription rate of 71 percent, which was based on year 2000 Census Bureau data indicating that Maryland had 2,158,000 households. See December 2010 Broadband Report, Table 16.

[14] This figure is derived by dividing the number of wireless broadband subscriptions by the number of occupied housing units. (792,000 / 2,086,000 = .3797 = 37.97%). See December 2010 Broadband Report, Tables 16 and 17.

[15] December 2010 Broadband Report, Table 24.

[16] December 2010 Broadband Report, Table 17.

[17] This figure is based on the Census Bureau's estimate that there were 528,396 business firms in Maryland in 2007. Therefore, dividing the number of business broadband Internet connections by the number of business firms, yields an estimate that there are 103 broadband business connections per 100 business firms. (546,000 / 528,396 = 1.0333 = 103.33%). See: http://www2.census.gov/econ/sbo/07/prelim/all_state_tbl.xls

Maryland's businesses rose from 430,000 on June 30, 2009 to 546,000 at year-end 2009. Broadband business connections rose by 116,000 during the second half of 2009 or by 27 percent.

More recent data from a survey of 3,506 U.S. businesses indicated that 95 percent of business firms nationwide have a broadband Internet connection.[18] According to those survey results, neither the total number of business broadband Internet connections nor the type of broadband Internet connection varied appreciably by size of company. For example, 95 percent of single-location firms reported that they had broadband Internet access while 96 percent of firms with two to ten offices reported that they had broadband Internet access. Approximately 93 percent of larger firms (more than ten locations) indicated that they had broadband Internet access and 92 percent of firms with more than fifty locations reported that they had broadband Internet access. Seventy-three percent of broadband Internet connections serving U.S. businesses are based on DSL technology with the remaining being delivered over dedicated private line connections.

Status of the Deployment of VoIP Services in Maryland

VoIP service is distinguished from traditional telephone service in several important ways.[19] Specifically:

- VoIP service generally provides for more functionality to consumers and is generally customizable by subscribers.
- VoIP service requires the use of a broadband connection. Use of VoIP service requires the consumer to purchase either a VoIP phone or a VoIP adapter, either of which is provided by the VoIP service provider,

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[18] *Business Broadband Capability Survey Results November 2010 Summary of Results*, DA 10-2251, Released November 30, 2010, available at: http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db1129/DA-10-2251A1.pdf

[19] The information summarized in this paragraph is from the FCC's webpage. See: http://www.fcc.gov/voip/. The FCC's web page provides a wide range of additional information on the features and characteristics of VoIP services. See, for example: http://search2.fcc.gov/search/index.htm?job=search&site=fcc_all&q=VoIP&Submit+search+request.x=7&Submit+search+request.y=12. The Maryland Office of People's Counsel also provides information about some of the characteristics and limitations of VoIP. See: http://www.opc.state.md.us/LinkClick.aspx?fileticket=PhMgGdmlCrI%3d&tabid=138. VoIP information is also available from county consumer protection offices in Maryland. See: http://www.montgomerycountymd.gov/content/POL/districts/MSB/communications/911/pdf_files/911_Brochure.pdf. Information about the features and characteristics of VoIP is also available from a wide range of online sources and VoIP service providers. See for example: http://ezinearticles.com/?Difference-Between-VoIP-Digital-Phone-Service-and-Traditional-Telephone-Service&id=2351985, http://www.coercs.com/2010/10/13/difference-between-the-voip-phone-service-digital-and-traditional-telephone-service/, http://www.quickstartvoip.com/articles/pstn-voip.html, http://www.axvoice.com/blog/what-is-the-difference-between-landline-and-voip-phone-service/, http://ohiostaterecsports.org/difference-between-voip-digital-phone-service-and-traditional-telephone-service/, http://articlestorehouse.com/Art/2910/272/Difference-Between-VoIP-Digital-Phone-Service-and-Traditional-Telephone-Service.html.

but may constitute an additional financial commitment from the consumer.

- VoIP service may require a battery backup system to be operational during power outages.
- VoIP service may not offer the same level of E911 access as traditional voice services.[20]
- VoIP service users typically do not have their numbers listed in a white pages directory as is the case with traditional voice services.

With the publication of the June 2010 issue of the FCC's biennial Local Telephone Competition Report, the FCC began to publish data on VoIP subscribers in addition to traditional telephone service subscribers.[21] In the most recent issue of the Local Competition Report, the FCC indicated that as of June 30, 2009 there were 437,000 VoIP connections sold to customers in Maryland.[22] That number of VoIP subscribers represented 12.83 percent of the 3.443 million access lines reported for Maryland on that date. Of all VoIP connections in Maryland, 417,000 or 95.42 percent are provided by carriers other than the two incumbent local exchange carriers in the State.[23] According to that Report, those non-incumbent VoIP connections were provided by 67 different VoIP

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[20] For example, users of nomadic VoIP services must register the location of the adapter to ensure that emergency calls are correctly routed.

[21] *Local Telephone Competition: Status as of December 31, 2008*, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, June 2010. (June 2010 Local Competition Report), available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-299052A1.pdf

This data reporting modification was preceded by changes in FCC Form 477 to gather information about retail interconnected VoIP service (as defined in footnote 1) and service providers in addition to traditional circuit switched telephone service and service providers. The FCC notes that the data does not include computer-to-computer VoIP connections such as that provided by Skype. The decision to use Form 477 to collect data on VoIP subscribership was made pursuant to a Notice of Proposed Rulemaking which was adopted by the FCC on February 26, 2007 in WC Docket No. 07-38 (*In the Matter of 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*). (Data Gathering Order). The FCC stated in the NOPR that "improved VoIP subscribership information would enable us to continue monitoring evolving competition for local telephone service customers." The content of the FCC's Data Gathering Order is further discussed in the next section of this report.

[22] *Local Telephone Competition: Status as of June 30, 2009*, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, September 2010. (September 2010 Local Competition Report). Table 8. Available at: http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db1122/DOC-301310A1.pdf

[23] September 2010 Local Competition Report Table 8.

providers.[24] Approximately 47 percent, or 417,000 of a total of 886,000 connections provided by non-incumbent providers are VoIP connections.[25]

The above data on VoIP service subscriptions represent significant gains during the first half of calendar year 2009. On December 31, 2008, the FCC reported that Maryland had 400,000 VoIP connections.[26] Those VoIP connections represented 11.62 percent of the 3.443 million year-end 2008 access lines reported for Maryland. At that point in time, 392,000, or 98 percent of all VoIP connections reported for Maryland were provided by carriers other than the two incumbent local exchange carriers in the State.

Residential Sector

The FCC's most recent data indicate that 383,000 or 88 percent of the 437,000 VoIP connections listed for Maryland as of June 30, 2009 are provided to residential customers. This level of residential VoIP connections indicates that approximately 25 percent of the residential landline broadband connections in Maryland actually use VoIP service.[27] All of the residential VoIP connections reported for Maryland are provided by entities other than Maryland's two incumbent local exchange carriers.[28] Non-incumbents' VoIP connections to residential customers represent over 77 percent of all non-incumbents' residential connections.[29]

In contrast to the most recent data referred to above, comparable data for year-end 2008 indicated that 93 percent or 370,000 of the 400,000 VoIP connections listed for Maryland were provided to residential customers.[30] At that point in time, all of the VoIP connections provided to residential customers in Maryland were provided by entities other than Maryland's two incumbent local exchange carriers.[31]

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[24] September 2010 Local Competition Report Table 16.

[25] September 2010 Local Competition Report Table 8.

[26] June 2010 Local Competition Report, Table 8.

[27] Calculated by dividing the reported number of residential VoIP connections by the reported number of fixed residential broadband connections: (383,000 / 1,538,000 = .2490 = 24.90%). This calculation must be interpreted as an approximation and should be considered a downward-biased estimate due to the fact that the number of VoIP subscriptions is based on mid-year 2009 data while the number of landline residential broadband connections is based on year-end 2009 data.

[28] September 2010 Local Competition Report Table 9.

[29] September 2010 Local Competition Report Table 9.

[30] June 2010 Local Competition Report Table 8.

[31] June 2010 Local Competition Report Table 9.

Business Sector

Of the 437,000 VoIP connections sold to customers in Maryland at mid-year 2009, 56,000 or 12.81 percent of those VoIP connections were provided to business customers.[32] Of those 56,000 business VoIP connections, 20,000 are listed as being provided by an incumbent local exchange carrier and the remaining 36,000 business VoIP connections are provided by entities other than Maryland's two incumbent local exchange carriers.

In contrast to the most recent data referred to above, at year end 2008, 31,000 VoIP connections were sold to business customers in the State.[33] Of those 31,000 business VoIP connections, 7,000 were listed as being provided by an incumbent local exchange carrier and the remaining 24,000 business VoIP connections were provided by other carriers.

Customer Complaints

Based on data assembled by the CPD and the OER, a total of 203 discrete customer complaints related to broadband and VoIP services have been filed since the beginning of 2007. Of those total complaints, 94 were received by the CPD and 109 were received by the OER. For various reasons, the total number of complaints recorded by those two complaint intake offices may not accurately or completely represent the extent to which customers have experienced problems with broadband and VoIP services or with the providers of those services. For example, the number of customer complaints received by the above mentioned complaint intake offices may understate the degree to which customers experience problems with VoIP and broadband services and their respective providers because each complaint received may pertain to several failures with the respective service or service provider.[34] In addition, the recorded number of complaints filed by customers at the CPD and at the OER does not include those that may be filed at other complaint intake locations such as the FCC, the various Better Business Bureau Offices in Maryland, and the local cable television franchising authorities in the State. On the other hand, the number of complaints received by the CPD and the OER may overstate the degree to which customers experience problems with VoIP and broadband services and their respective providers because some of the complaints received by the

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[32] September 2010 Local Competition Report Table 10. The percentage figure is calculated by dividing the number of business VoIP subscribers (56,000) by the total number of VoIP service subscriptions (437,000) sold in Maryland.

[33] June 2010 Local Competition Report Table 10.

[34] For example, a problem that is encountered at the service installation stage may be due to telephone number porting, back office operations, network capability or other problems. Contact between the customer and the provider's customer service representative may result in the customer being dissatisfied with their treatment by the provider's service representative. In addition, the customer may have a subsequent problem with the prorated amount of the bill. In that situation, the complaint that is filed may be recorded as a number porting problem, an installation problem, a customer service problem, a network service quality problem, a billing problem or a combination of those.

OER over the 2007-2010 period may have been referred to the CPD. As a result, the same complaint may appear in the database of both complaint intake offices.

With those caveats in mind, the customer complaints received by the CPD and the OER show the following breakdown by year since 2007.

	CPD	OER	Total
2007	39	37	76
2008	35	23	58
2009	13	20	33
2010	7	29	36
Total 2007-10	94	109	203

As previously indicated, customer complaints filed with the CPD and the OER frequently cite more than one failure related to the service in question or with the service provider. Customer care issues include errors or failures committed by the provider in the ordering, installation and repair processes and may include failure to provide all services that were ordered, failure to honor cancellation requests, inability of the customer to reach appropriate customer service personnel, and missed installation and repair appointments. Billing issued cited in the CPD and OER data include unauthorized charges, incorrect billed amounts, unexpected price changes and difficulty in receiving refunds or credits. In addition, several complaints pertained to intermittent service outages, services that failed to operate as expected or that were unavailable due to technical network issues. These were regarded as network service quality issues and were not frequently represented in the data received from the CPD and the OER.

The descriptions provided by the CPD and the OER in connection with each customer complaint were examined to determine whether they related to customer care, billing, network service quality or a combination of those failures.[35] As summarized below, that analysis indicates customer complaints are most frequently related to customer care or billing issues.[36]

	Customer Care	Billing	Network	Total
2007	38	36	12	86
2008	14	36	10	60

[35] As previously indicated, it is not always possible to categorize a particular customer complaint unambiguously. For example, if the customer service representative notes the complaint as a failure to "provide all services," it is unclear whether that failure relates to a technical network problem or if it arises from an error in the ordering process.

[36] Customer complaint data provided by the CPD covered only VoIP complaints, while customer complaint data provided by the OER included complaints pertaining to VoIP, Internet access, video and a combination of those services. Some of those complaints were related to billing issues that arose in the context of bundled service offerings which may have included traditional telephone service rather than VoIP service.

2009	11	15	10	36
2010	14	18	6	38
Total 2007-10	77	105	38	220

The largest number of complaints filed with the CPD and the OER over the 2007-2010 period related to services provided by Vonage and Comcast. Of the 203 customer complaints recorded by those complaint intake offices during the 2007-2010 period, 89 involved Vonage and 54 complaints were filed against Comcast.[37]

Summary

Because the data on VoIP connections in Maryland lags the production of this report by eighteen months, it does not reflect the impact of any growth by the numerous VoIP providers that were active in the State at mid-year 2009, the entry of any new VoIP providers since then or Verizon's mass market rollout of its FiOS Digital Voice service in mid-2010.[38] Even in the absence of information on Verizon's VoIP rollout, the data indicate that VoIP connections are growing rapidly, while the total number of connections to the telephone network is falling. Based on the two data points covered in the FCC's reports, total VoIP connections in Maryland had grown from 400,000 to 437,000 or by 9.25 percent over the 6-month period during the first half of 2009. During that 6-month period, VoIP connections for residential customers grew from 370,000 to 388,000 or by 4.86 percent while VoIP connections for business customers grew from 31,000 to 56,000 or by 80.65 percent.

In addition, the FCC's most recent Local Competition Report indicates that Maryland has 97 non-incumbent local exchange carriers and VoIP providers, of which 67 are VoIP providers.[39] This suggests that VoIP connections are provided by a wide array of carriers and that the communications market in Maryland has become less concentrated as VoIP subscriptions have replaced traditional telephone service. Table 20 of the most recent report supports this contention. According to that data, the availability of non-incumbent telephone service providers and VoIP providers is virtually ubiquitous in Maryland. More specifically, only one percent of the zip codes in Maryland have as few as one provider, while 99 percent of the State's zip codes have more than one such provider.[40] As a result of market share gains by non-incumbent carriers (the vast majority of it due to

[37] The remainder of the customer complaints were against Verizon (20 customer complaints), SunRocket (11 customer complaints) and the following providers (one or two complaints each): Packet 8, DCI Voice Solutions, Broadstar, Cavalier, SmartZone, Global Links, Armstrong Cable, Teleport, Hostednumbers.com, Surftone Lingo, Tanaco Inc., Steel Bridge Medical, VOIP.com, Millenium Digital Media, Speakeasy.net Joiphone, IPT, Inc., and Globalinx.

[38] *FiOS, the Best Choice, Now Available With the Best Voice*, Verizon News Release, June 3, 2010.

[39] September 2010 Local Competition Report, Table 16.

[40] September 2010 Local Competition Report Table 20.

increased VoIP subscribership), competitive providers' share of telephone and VoIP connections rose from 15% in mid-year 2008 to 26% in mid-year 2009.[41]

The rapid acceptance of VoIP connections has allowed the penetration rate for telephone service in Maryland to increase in recent years.[42] The telephone penetration rate for Maryland in March of 2010 was reported by the FCC as 97.5 percent.[43] That figure exceeds by 1.2 percentage points the 96.3 percent penetration rate reported for Maryland in 1983 and is the highest penetration rate for telephone service that has ever been reported for Maryland.[44] While the rapid growth in VoIP connections can be viewed as a partial cause of increasing penetration rates, there are other causes as well. For example, wireless connections in Maryland grew from 3.968 million in June of 2005 to 5.26 million connections in June of 2009.[45] That change represents a compound annual rate of growth of 7.30 percent.

In conclusion, VoIP is widely available in Maryland from a wide variety of providers and, in conjunction with wireless phone service, is competing successfully with traditional landline telephone service. Because the FCC's data collection efforts on VoIP subscriptions have been in place for only one year, it is not possible to more precisely assess the effectiveness with which VoIP service has displaced traditional landline service. Based on the limited available data however, it can be determined that subscriptions to traditional landline telephone service have been declining in recent years while wireless voice service and VoIP service subscriptions have been increasing. Indeed, traditional telephone access lines in Maryland peaked at 3.921 million in June of 2003.[46] From June of 2005 to June of 2008, the number of traditional voice connections in Maryland fell by 802,000 from 3.890 million access lines to 3.088 million. This represents an annual rate of decline of 7.41 percent. During that period, wireless connections rose by 1,156,000 from 3.968 million in June of 2005 to 5.124 million in

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[41] *Local Telephone Competition: Status as of June 30, 2008*, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, Table 8 and September 2010 Local Competition Report, Table 10 (June 2008 Local Competition Report).

[42] Telephone penetration rates measure the percentage of households with telephone service and is based on data collected by the Census Bureau as part of its Current Population Survey. The Current Population Survey is conducted monthly between the decennial censuses. The specific question asked in the Current Population Survey is: "Does this house, apartment, or mobile home have telephone service from which you can both make and receive calls? Please include cell phones, regular phones, and any other type of telephone." Current Population survey data are based on a sample of 50 to 60 thousand households in the 50 states and the District of Columbia.

[43] *Telephone Subscribership in the United States (data through March 2010)*, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, released August 2010, Table 2 (August 2010 Subscribership Report).

[44] August 2010 Subscribership Report Table 3.

[45] September 2010 Local Competition Report, Table 17.

[46] June 2008 Local Competition Report, Tables 9 and 10.

June 2008 for a compound annual rate of growth of 8.90 percent and, as of June 2009, stand at 5.260 million.[47] And, as previously indicated, VoIP connections rose from 400,000 in December 2008 to 437,000 in June of 2009, representing a compound annual rate of increase of 19.36 percent.[48]

Consumer complaint data assembled by the CPD and the OER indicate that there were 203 customer complaints filed during the 2007-2010 period pertaining to VoIP and broadband Internet services. Most of those customer complaints were related to customer care or billing issues. Complaints related to customer care issues were filed primarily in response to failures by services providers in the processes used to implement orders, service installation and repair. Customer complaints related to customer bills were primarily the result of unauthorized charges, incorrect billed amounts, unexpected price changes, and difficulty in receiving bill refunds or credits.

The status of any federal legislation or regulatory proceedings before the Federal Communications Commission relating to Internet Protocol-enabled Services

Beginning in 2004, the FCC began to implement a series of requirements that collectively have imbued VoIP service with many of the same consumer protections that have been associated with traditional telephone service. As a result of these actions, an increasing number of business and residential customers view VoIP service as a close substitute for traditional circuit switched telephone service. Since 2004, the FCC has issued orders addressing various aspects of VoIP service and has imposed restrictions and obligations on VoIP providers including E911, Communications Assistance for Law Enforcement (CALEA), number portability, customer proprietary network information (CPNI), reporting requirements, disability access, regulatory assessments and service discontinuance. In addition, the FCC has required traditional telephone service providers to interconnect with and exchange traffic with VoIP providers. During this process the FCC has refrained from formally classifying VoIP service as telecommunications service subject to regulation under the provisions of Title II of the Telecommunications Act or as an information service.[49] Each of the additional protections and reporting requirements listed below was adopted pursuant to the FCC's ancillary jurisdiction under Title I of the Communications Act as amended.[50]

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[47] September, 2010 Local Competition Report, Table 17.

[48] June 2010 Local Competition Report, Table 8 and September 2010 Local Competition Report, Table 8.

[49] In its most recent ruling to extend service discontinuance rules to interconnected VoIP services, the FCC stated that "[t]he Commission to date has not classified interconnected VoIP service as a telecommunications or information service as those terms are defined in the Act, and we do not make that determination today." *In the Matter of IP-Enabled Services*, WC Docket No. 04-36, Report and Order, adopted May 13, 2009, released May 13, 2009, footnote 21.

[50] In the opinion of the FCC, ancillary jurisdiction under Title I of the Communications Act as amended may be employed when Title I gives it the subject matter jurisdiction over the service to be regulated and the assertion of jurisdiction is reasonably ancillary to the effective performance of its various

With the issuance of the National Broadband Plan in the spring of 2010, the FCC established a roadmap of regulatory actions that are designed to increase the availability and use of IP-enabled services by promoting increased deployment of broadband facilities. The National Broadband Plan included over 200 policy recommendations which affect the FCC, other government agencies and Congress. As a roadmap for implementing the recommendations of the National Broadband Plan, the FCC issued the Broadband Action Agenda. According to that agenda, the FCC currently has over 60 open action items related to the implementation of the National Broadband Plan. See Attachment A. The policy agenda outlined by the National Broadband Plan entails modifications to the federal universal service programs and the system of intercarrier compensation, both of which have been under review and modification for several years. In addition, the Broadband Action Agenda intends to re-examine existing policies on special access services, develop guidelines on broadband speeds and network performance, and examine cyber security and network integrity issues. This section of the report summarizes FCC actions taken pursuant to its IP-enabled services agenda and those undertaken as a result of the recommendations made in the National Broadband Plan.

IP-enabled Services Notice of Proposed Rulemaking

On March 10, 2004, the FCC opened a docket and issued a Notice of Proposed Rulemaking for IP-enabled services.[51] The FCC noted that IP-based voice services have

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responsibilities. See *United States v. Southwestern Cable Co.*, 157 177-178 (1968); *United States v. Midwest Video Corp.*, 406 U.S. 649, 667-68 (1972); *FCC v. Midwest Video Corp.*, 440 U.S. 689, 700 (1979).

The distinction between Titles I (general provisions) and II (common carriers) of the Communications Act as amended has been the subject of much debate over the past several years as the FCC and Congress have debated the issue of network neutrality.

[51] Notice of Proposed Rulemaking, *In the Matter of IP-Enabled Services*, WC Docket No. 04-36, adopted February 12, 2004, released March 10, 2004 (IP-Enabled NOPR).

At the same time that this NOPR was issued, the FCC issued a Memorandum Opinion and Order in WC Docket No. 03-45 declaring that pulver.com's Free World Dialup service will remain a minimally regulated competitive option for consumers. (See *In the Matter of Petition for Declaratory Ruling that pulver.com's Free World Dialup Is Neither Telecommunications Nor a Telecommunications Service*.) The FCC determined that Free World Dialup is an Internet application that is an unregulated information service that is subject to the FCC's jurisdiction.

Shortly after the issuance of the pulver.com Order referenced above, the FCC issued two other orders that helped clarify the regulation of IP services. On April 14, 2004 an Order was issued in WC Docket No. 02-361 (*In the Matter of Petition for Declaratory Ruling that AT&T's Phone-to-phone IP Telephony Services Are Exempt from Access Charges*) which found that voice communications that both originate and terminate as circuit switched telephone traffic are telecommunications regardless of the transmission protocol that is used between the originating and terminating end of the call. On November 9, 2004, the FCC issued a Memorandum Opinion and Order in WC Docket No. 03-211 (*In the Matter of Vonage Holdings Corporation for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*) which found that Vonage's DigitalVoice service and similar services offered by other

been offered in various forms since at least 1995 and that business customers, particularly large business customers, were already highly dependent on VoIP and other IP-enabled services while the penetration of those services in the residential markets was proceeding apace.[52] As early as 2004, the FCC expected VoIP and other IP-enhanced services to reduce costs, spur innovation, bolster network redundancy and resiliency and enhance individualization.[53] The FCC noted that VoIP services are not mere substitutes for traditional telephony services, but rather are fundamentally different administratively and technically from traditional voice services. On that basis, the FCC acknowledged that the rise of IP-enabled services challenged many key assumptions on which communications networks were constructed and managed as well as the regulation of those networks and stated that the purpose of the proceeding was to elicit comments on the appropriate regulatory treatment of IP-enabled services including VoIP.[54] In particular, the FCC sought comment on the implications of IP-enabled services on public safety, disability access, carrier compensation, universal service, and the need for various consumer protections and economic regulation.

E911

During 2005, the FCC issued a series of orders directing the manner in which VoIP providers and their customers shall be afforded access to E911 capabilities. In May 2005, the FCC issued an Order which set forth a schedule for E911 functionality to be made available in connection with all interconnected VoIP services.[55] Specifically, the May 19, 2005 Order required (a) interconnected VoIP providers to deliver all 911 calls to the customer's local emergency operator, (b) provide to the emergency operators that are capable of receiving them, the caller's call back number and local information, (c) inform customers of the VoIP provider's E911 capabilities and limitations, and (d) require all incumbent local exchange carriers to provide access to their E911 networks to any requesting carrier.[56] On July 26, 2005, the FCC issued further guidance to VoIP

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providers are exempt from traditional state public utility regulation. In making its finding, the FCC stated that it has the responsibility and obligation to decide whether certain regulations apply to IP-enabled services and that states' efforts to thwart or impede federal authority over interstate communications would be preempted. On March 3, 2005, the FCC issued an Order in File No. EB-05-IH-0110, Acct. No. 200532080126, FRN: 0004334082 (*In the Matter of Madison River Communications, LLC and affiliated companies*) which determined that Madison River "shall not block ports used for VoIP applications or otherwise prevent customers from using VoIP applications."

[52] IP-enabled NOPR, Paragraphs 3, 11.

[53] IP-enabled NOPR, Paragraph 5.

[54] IP-enabled NOPR, Paragraph 4.

[55] *In the Matters of IP-enabled Services and E911 Requirements for IP-enabled Service Providers*, WC Docket No. 04-36 and WC Docket No. 05-196, First Report and Order and Notice of Proposed Rulemaking, adopted May 19, 2005, released June 3, 2005.

[56] *Id.*

providers on the schedule for notifying customers of the E911 capabilities and limitations of their services.[57] On August 26, 2005, the FCC issued additional guidance to VoIP providers concerning enforcement of the subscriber acknowledgement requirement set forth in its VoIP E911 rules.[58] Specifically, the date where 100% of VoIP subscribers must acknowledge the capabilities and limitations of the VoIP provider's E911 capability was moved from August 29, 2005 to September 28, 2005.[59]

CALEA

The Communications Assistance for Law Enforcement Act (CALEA) was enacted by Congress on October 25, 1994 in an effort to preserve the ability of law enforcement agencies to conduct electronic surveillance of public communications systems. CALEA applies to traditional landline telephone networks, wireless networks and interconnected VoIP providers (which are defined as telecommunications carriers for purposes of CALEA). On August 5, 2005, the FCC issued an Order which determined that CALEA applies to facilities-based broadband Internet access providers and providers of interconnected VoIP service. As such, the FCC required that VoIP providers and broadband Internet access providers configure their networks such that their networks can accommodate wiretaps by authorized law enforcement authorities.[60] In its Second Report and Order, the FCC determined that broadband Internet access providers and interconnected VoIP providers must be in compliance with CALEA's surveillance requirements by May 14, 2007 and established reporting requirements to ensure that the specified compliance deadline was met.[61]

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[57] *Enforcement Bureau Provides Guidance to Interconnected Voice Over Internet Protocol Service Providers Concerning the July 29, 2005 Subscriber Notification Deadlines*, WC Docket No. 04-36 and WC Docket No. 05-196, July 26, 2005. As part of this enforcement effort, the FCC required VoIP providers to submit compliance reports detailing their efforts to inform consumers of the VoIP providers' E911 capabilities and limitations. The FCC also ordered that "if an interconnected VoIP provider has not received subscriber acknowledgements from 100% of its existing subscribers by August 29, 2005, then the interconnected VoIP provider will disconnect, no later than August 30, 2005, all subscribers from whom it has not received such acknowledgements."

[58] *Enforcement Bureau Provides Further Guidance to Interconnected Voice Over Internet Protocol Service Providers Concerning Enforcement of Subscriber Acknowledgement Requirement*, WC Docket No. 04-36 and WC Docket No. 05-196, August 26, 2005.

[59] Id.

[60] *In the Matter of Communications Assistance for Law Enforcement Act and Broadband Access and Services, First Report and Order and Further Notice of Proposed Rulemaking*, ET Docket No. 04-295 and RM-10865, adopted August 5, 2005, released September 23, 2005.

[61] *In the Matter of Communications Assistance for Law Enforcement Act and Broadband Access and Services, Second Report and Order and Memorandum Opinion and Order*, ET Docket No. 04-295 and RM-10865, adopted May 3, 2006, released May 12, 2006.

Universal Service

In a June 21, 2006 Order, the FCC extended the obligation to fund universal service programs to interconnected VoIP providers.[62] As stated in that Order, the purpose of establishing universal service funding requirements on interconnected VoIP services (as well as wireless services) was to provide stability to the universal service funding mechanism in an environment where the existing assessment base (interstate long distance telecommunications revenues) was declining at the same time that wireless services and interconnected VoIP services were growing.[63] The FCC ordered that interconnected VoIP providers shall contribute to the federal high cost and low income universal service programs on the basis of their interstate and international end user revenues.[64] Such payments are to be based on the use of the FCC established safe harbor or default proportion of total revenue, actual interstate and international end user revenues or traffic studies.[65] The safe harbor was established at 64.9 percent.[66] While interconnected VoIP service providers were obligated to support the Federal Universal Service Programs, the FCC noted in a separate docket that, with the exception of the schools and libraries program, interconnected VoIP service providers do not receive benefits from those programs.[67] In a Declaratory Ruling adopted on October 28, 2010, the FCC determined that "states may extend their universal service contribution requirements to future intrastate revenues of nomadic interconnected Voice over Internet Protocol (VoIP) service providers, so long as a state's particular requirements do not conflict with federal law or policies."[68]

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[62] *In the Matter of Universal Service Contribution Methodology*, and *Federal-State Joint Board on Universal Service*, and *1998 Biennial Regulatory Review—Streamlined Contributor Reporting Requirements Associated with Administration of Telecommunications Relay Service, North American Numbering Plan, Local Number Portability, and Universal Service Support Mechanisms* and *Telecommunications Services for Individuals with Hearing and Speech Disabilities, and the Americans with Disabilities Act of 1990*, and *Administration of the North American Numbering Plan and North American Numbering Plan Cost Recovery Contribution Factor and Fund Size*, and *Number Resource Optimization*, *Telephone Number Portability*, and *Truth-in-Billing and Billing Format*, and *IP-Enabled Services*, WC Docket No. 06-122, CC Docket Nos. 96-45, 98-171, 90-571, 92-237, NSD File No. L-00-72, CC Docket Nos. 99-200, 95-116, 98-170, WC Docket No. 04-36, Report and Order and Notice of Proposed Rulemaking, adopted June 21, 2006, released June 27, 2007 (USF Order).

[63] USF Order, paragraph 3.

[64] USF Order, paragraph 52.

[65] USF Order, paragraph 52.

[66] USF Order, paragraph 53.

[67] *In the Matter of Assessment and Collection of Regulatory Fees for Fiscal Year 2007*, MD Docket No. 07-81, Report and Order and Further Notice of Proposed Rulemaking, adopted August 2, 2007, released August 6, 2007, paragraph 19.

[68] *In the Matter of Universal Service Contribution Methodology* and *Petition of Nebraska Public Service Commission and Kansas Corporation Commission for Declaratory Ruling or, in the Alternative, Adoption of Rule Declaring that State Universal Service Funds May Assess Nomadic VoIP Intrastate*

Interconnection

On March 1, 2007, the FCC issued a Memorandum Opinion and Order which ensured that interconnected VoIP providers are entitled to exchange traffic with incumbent local exchange carriers.[69] This Order was issued in response to a Request for Declaratory Ruling filed by Time Warner, who sought interconnection to a rural incumbent local exchange carrier via the facilities of several competitive local exchange carriers. In making the request, Time Warner sought to provide a means by which the VoIP traffic of its customers could be exchanged with traditional telephone companies. The FCC determined that the State regulatory authorities in South Carolina and Nebraska misinterpreted the Telecommunications Act when they ruled that wholesale carriers, such as Time Warner, were not telecommunications carriers if they intended to interconnect with the incumbent local exchange carrier for purposes of originating and terminating VoIP traffic. The FCC ruled that competitive local exchange carriers, such as Time Warner, had interconnection and traffic exchange rights under the Telecommunications Act regardless of the type of services offered by their wholesale customers: "We clarify that the statutory classification of a third-party provider's VoIP service as an information service or a telecommunications service is irrelevant to the issue of whether a wholesale provider of telecommunications may seek interconnection under section 251(a) and (b)."[70]

CPNI

On March 13, 2007, the FCC issued an Order which enhanced its customer proprietary network information (CPNI) rules, first established in 1998 for telecommunications carriers, and extended those rules to interconnected VoIP providers.[71] Every telecommunications carrier is obligated by Section 222 of the Telecommunications Act to protect the confidentiality of its customers' CPNI which includes any personally identifiable information derived from a customer's relationship with a provider of communications service. CPNI is defined as "information that relates to the quantity, technical configuration, type, destination, location, and amount of use of a telecommunications service" and "information contained in the bills pertaining to

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Revenues, WC Docket No. 06-122, Declaratory Ruling, adopted October 28, 1010, released November 5, 2010, paragraph 1.

[69] *In the Matter of Time Warner Request for Declaratory Ruling that Competitive Local Exchange Carriers May Obtain Interconnection Under Section 251 of the Communications Act of 1934, as Amended, to Provide Wholesale Telecommunications Services to VoIP Providers*, Memorandum Opinion and Order, WC Docket No. 06-55, adopted and released March 1, 2007.

[70] *Id.*, paragraph 15.

[71] *In the Matter of Implementation of the Telecommunications Act of 1996* and *Telecommunications Carriers' Use of Customer Proprietary Network Information and Other Customer Information*, Report and Order and Further Notice of Proposed Rulemaking, CC Docket No. 96-115 and WC Docket No. 04-36, adopted March 13, 2007, released April 2, 2007 (CPNI Order).

telephone exchange service or telephone toll service received by a customer of a carrier."[72] CPNI includes account information (such as account number, telephone number, billing address, bill amount), call detail information (including telephone numbers to which calls were placed or from which calls were received, time, location and duration of calls) and biographical information (such as social security number, password, account security codes, home address and date of birth). In extending the established privacy protections related to the disclosure of CPNI to interconnected VoIP providers, the FCC noted that "we continue to believe that consumers have a reasonable expectation that such services are replacements for 'regular telephone' service."[73] As a result, the FCC concluded that "American consumers … expect that their telephone calls are private irrespective of whether the call is made using the services of a wireline carrier, a wireless carrier, or an interconnected VoIP provider, given that these services, from the perspective of a customer making an ordinary telephone call, are virtually indistinguishable."[74] The FCC also observed that extending the obligation to protect the confidentially of CPNI to interconnected VoIP providers "is necessary to protect the privacy of wireline and wireless customers that place calls to or receive calls from interconnected VoIP customers."[75]

Disability Access

The FCC adopted a Report and Order on May 31, 2007 which extended the disability access requirements of Sections 225 and 255 of the Communications Act to providers of interconnected VoIP services and to manufactures of equipment used to provide those services.[76] Section 255 of the Communications Act requires that telecommunications equipment be accessible to and usable by individuals with disabilities, while Section 225 of the Act requires that telecommunications relay services are available to hearing-impaired and speech-impaired individuals in the United States. In 1999, the FCC adopted rules implementing Section 255 of the Act and issued rules (codified in 47 C.F.R. § 64.601) in 2004 implementing Section 225 of the Act.[77] By extending disability

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[72] 47 U.S.C. § 222(h)(1).

[73] CPNI Order, footnote 170.

[74] CPNI Order, paragraph 56.

[75] CPNI Order, paragraph 57.

[76] *In the Matters of IP-enabled Services* and *Implementation of Sections 255 and 251(a)(2) of The Communications Act of 1934, as Enacted by The Telecommunications Act of 1996: Access to Telecommunications Service, Telecommunications Equipment and Customer Premises Equipment by Persons with Disabilities* and *Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities* and *The Use of N11 Codes and Other Abbreviated Dialing Arrangements*, WC Docket No. 04-36, WT Docket No. 96-198, CG Docket No. 03-123, CC Docket No. 92-105, Report and Order, adopted May 31, 2007, released June 15, 2007 (Disability Access Order).

[77] Disability Access Order, paragraphs 3, 7.

access obligations to interconnected VoIP providers, the FCC mandated that interconnected VoIP providers contribute to the Interstate Telecommunications Relay Service Fund and offer 711 abbreviated dialing for access to relay services which may include the use of a text telephone, speech-to-speech services, captioned telephone service, video relay service, IP relay service and IP captioned telephone service.[78]

Section 105 of the Twenty-First Century Communications and Video Accessibility Act ("Accessibility Act") of 2010, which was signed by President Obama on October 8, 2010, requires that the FCC establish rules pertaining to the distribution of specialized customer premises equipment designed to make telecommunications service, Internet access service and advanced communications accessible by low income individuals who are deaf or blind.[79] On November 3, 2010, the FCC initiated a proceeding to ensure that citizens with disabilities have access to emerging technologies including interconnected VoIP service.[80] The Accessibility Act defined advanced communications to include interconnected VoIP service, non-interconnected VoIP service, electronic message service and interoperable video conferencing service.[81]

Regulatory Fees

On August 2, 2007, the FCC issued an Order which, for the first time, imposed regulatory fee assessments on interconnected VoIP providers.[82] Annually, the FCC assesses fees on the revenues of industry participants to cover costs associated with its enforcement, policy and rulemaking, user information, and international activities pursuant to Section 9 of the Communications Act of 1934 as amended. In expanding the industry participants that are assessed the regulatory fee to include interconnected VoIP providers, the FCC noted that "interconnected VoIP services are now required to contribute to the Universal Service Fund … interconnected VoIP providers should also pay regulatory fees."[83] The regulatory fee assessment for interconnected VoIP providers is based on their interstate and international revenues as reported on Form 499-A and is assessed at the same rate as

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[78] Disability Access Order, paragraph 1, 7.

[79] The text of the Twenty-First Century Communications and Video Accessibility Act of 2010 is available at: https://prodnet.www.neca.org/publicationsdocs/wwpdf/s3304.pdf

[80] *Consumer and Governmental Affairs Bureau Seeks Comment on Implementation of Requirement to Define Programs for Distribution of Specialized Customer Premises Equipment Used by Individuals Who Are Deaf-Blind*, Public Notice, CG Docket No. 10-210, Released November 3, 2010 (Accessibility Notice).

[81] Accessibility Notice, footnote 8.

[82] *In the Matter of Assessment and Collection of Regulatory Fees for Fiscal Year 2007*, MD Docket No. 07-81, Report and Order and Further Notice of Proposed Rulemaking, adopted August 2, 1007, released August 6, 2007 (Assessment Order).

[83] Assessment Order, paragraph 11.

interstate telecommunications service providers.[84] In assessing regulatory fees on Interconnected VoIP providers, the FCC observed that "[i]nterconnected VoIP service is increasingly used to replace traditional telephone service" and that "interconnected VoIP providers offer a service that is almost indistinguishable, from the consumers' point of view, from the service offered by interstate telecommunications service providers."[85] The FCC went on to note that, "the explosive growth of the VoIP industry in recent years has resulted in recent Commission actions addressing the service. The growth of the VoIP industry and the extent to which VoIP service is used as a substitute for analog voice service has necessitated a number of Commission rulemaking proceedings pertaining to interconnected VoIP services."[86]

Numbering Resources and Local Number Portability

In order to address customer expectations regarding VoIP services, continue to facilitate the migration to VoIP services and further enhance the competitiveness of the retail communications market, on October 31, 2007, the FCC issued a Report and Order which extended its local number portability (LNP) rules to interconnected VoIP providers and obligated interconnected VoIP providers to contribute to the cost of maintaining the North American Numbering Plan.[87] Specifically, the FCC determined that telephone numbers shall be allowed to be ported from or to a licensed telecommunications service provider as well as between interconnected VoIP providers. This ruling was initiated as a result of complaints from consumers and certain interconnected VoIP providers of instances where porting telephone numbers to or from an interconnected VoIP provider was being prevented. In extending number portability rules to interconnected VoIP providers, the FCC noted that, in the absence of a waiver, only telecommunications carriers were entitled to receive telephone numbers directly from the North American Numbering Plan Administrator.[88] Interconnected VoIP providers generally do not obtain a license or a certificate of public convenience and necessity from a state regulatory

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[84] Assessment Order, paragraphs 11, 15, 18.

[85] Assessment Order, paragraphs 12, 18.

[86] Assessment Order, paragraph 18.

[87] *In the Matter of Telephone Number Requirements for IP-enabled Services Providers* and *Local Number Portability Porting Interval and Validation Requirements* and *IP-enabled Services and Telephone Number Portability* and *CTIA Petitions for Declaratory Ruling on Wireline-Wireless Porting Issues* and *Final Regulatory Flexibility Analysis* and *Numbering Resource Optimization*, WC Docket Nos. 07-243, 07-244 and 04-36 and CC Docket Nos. 95-116 and 99-200, Report and Order, Declaratory Ruling, Order on Remand, and Notice of Proposed Rulemaking, adopted October 31, 2007, released November 8, 2007 (LNP Order).

Number portability is defined in 47 U.S.C. § 153(30) as "the ability of users of telecommunications services to retain, at the same location, existing telecommunications numbers without impairment of quality, reliability, or convenience when switching from one telecommunications carrier to another."

[88] LNP Order, paragraph 20.

commission and therefore, such providers are not telecommunications companies and are not authorized to obtain telephone numbers directly from the North American Numbering Plan Administrator. For that reason, interconnected VoIP providers generally obtain telephone numbers through commercial arrangements with licensed telecommunications service providers. As a result, porting of numbers to or from an interconnected VoIP provider involves not only that provider, but also the VoIP provider's numbering partner and the landline, wireless or VoIP carrier from whom or to whom the number is ported.

Data Gathering

On March 29, 2008, the FCC issued an Order to enhance and extend the collection of data on broadband deployment.[89] Specifically, the Order expanded the data collected from the industry and required that data be reported on a more granular level. Data Collection Form 477 was modified in three respects: broadband service providers were required to report upload and download data speed and subscriber counts on a census tract basis, mobile wireless broadband service providers were required to report the number of subscribers whose data plans permit Internet access and interconnected VoIP providers were required to report subscribership information.[90] In addition, the FCC sought comment on: 1) developing a nationwide broadband availability mapping program, 2) ways in which actual upload and download data transfer speeds could be effectively captured, 3) collecting prices for Internet access and 4) whether Form 477 filers should report voice subscribers at the ZIP code level or at some other geographically relevant level.[91] A voluntary registry was established which allows broadband users to voluntarily report actual data transfer speeds.[92] With respect to data collection efforts directed at interconnected VoIP services, the FCC noted that "interconnected VoIP service subscribers represent an important and rapidly growing part of the U.S. service market, and interconnected VoIP services are becoming increasingly competitive with other forms of local telephone service."[93] The specific reporting

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[89] *In the Matter of Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscription Data, and Development of Data on Interconnected Voice Over Internet Protocol (VoIP) Subscribership*, Report and Order and Further Notice of Proposed Rulemaking, WC Docket No. 07-38, adopted March 19, 2008, released June 12, 2008 (Data Gathering Order).

[90] Data Gathering Order, paragraphs 3, 14. A census tract is defined by the Census Bureau as a "small, relatively permanent statistical subdivision of a county delineated by a local committee of census data users for the purpose of presenting data. Census tract boundaries normally follow visible features, but may follow governmental unit boundaries and other non-visible features in some instances; they always nest within counties. Designed to be relatively homogenous units with respect to population characteristics, economic status, and living conditions at the time of establishment, census tracts average about 4,000 inhabitants. They may be split by any sub-county geographic entity." U.S. Census Bureau, http://factfinder.census.gove/home/en/epss/glossary_c.html

[91] Data Gathering Order, paragraph 4.

[92] Data Gathering Order, paragraph 22.

[93] Data Gathering Order, paragraph 26.

requirements established for interconnected VoIP providers included the number of end-user and resale subscribers served in each state, the percentage of end-user and resale subscribers that are residential customers, whether the broadband connection used is owned by the Form 477 filer or leased from an affiliate, a list of five-digit ZIP codes in which they have at least one subscriber, the type of broadband connection used to provide the interconnection VoIP service and whether the broadband connection is fixed or nomadic.[94]

Service Discontinuance

On May 13, 2009, the FCC issued a Report and Order which extended to interconnected VoIP providers the existing rules that govern the discontinuance of services offered by non-dominant telecommunications service providers.[95] In issuing its Report and Order to extend existing discontinuance rules to interconnected VoIP providers, the FCC noted that:

> [c]onsumers increasingly use interconnected VoIP service as a replacement for traditional voice service, and as interconnected VoIP service improves and proliferates, consumers' expectations for this type of service trend toward their expectations for other telephone service. Thus, in this Report and Order, we take steps to protect consumers of interconnected VoIP service from the abrupt discontinuance, reduction, or impairment of their service without notice. Specifically, we extend to providers of interconnected VoIP service the discontinuance obligations that apply to domestic non-dominant telecommunications carriers under section 214 of the Communications Act of 1934, as amended. [96]

As such, prior to discontinuance of service by any interconnected VoIP provider, the provider must provide written notice to all affected customers, notify the state public service commission and Governor of each affected state, and file an application for authorization of the planned discontinuance with the FCC.[97] The notice to customers must include the name and address of the carrier, the date of the planned service discontinuance, the geographic area(s) where service is proposed to be discontinued, and a description of the type of service affected by the proposed discontinuance. It must inform the customer that the proposed service discontinuance can be challenged by filing

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[94] Data Gathering Order, paragraphs 29-31.

[95] *In the Matter of IP-enabled Services*, WC Docket No. 04-36, Report and Order, adopted May 13, 2009, released May, 13, 2009 (Service Discontinuance Order).

[96] Service Discontinuance Order, paragraph 2.

[97] Service Discontinuance Order, paragraphs 6-7, 17.

written comments to the FCC following public notice of the proposed discontinuance.[98] Unless otherwise notified by the FCC, the proposed service discontinuation will be granted to an interconnected VoIP provider on the 31st day following the FCC's public notice.

Pole Attachments

On May 20, 2010, the FCC issued an Order and Further Notice of Proposed Rulemaking as a first step in "the process of revising the Commission's pole attachment rules to lower the cost of telecommunications, cable, and broadband deployment and to promote competition, as recommended in the National Broadband Plan."[99] In that Order, the FCC sought to implement recommendations from The Broadband Plan regarding pole attachments including establishment of rates that are low and as close to uniform among different kinds of users, implement rules governing the management and use of pole attachment space that will lower the cost of and shorten the time frame for attachments, establish and expedite the dispute resolution process regarding pole attachments, and improve the collection and availability of information regarding the location and availability of poles, ducts, conduits and rights-of-way.[100] The FCC's investigation into pole attachment processes is ongoing and will be further pursued as evidenced by the issuance of a Further Notice of Proposed Rulemaking. Specifically, the Notice seeks to identify additional changes in pole management practices that will "speed the availability of broadband by making it easier and less expensive for telecommunications and cable companies to use existing infrastructure."[101]

Special Access Facilities and Services

On October 28, 2010, the FCC issued a request for data on special access facilities and services.[102] The purpose of the request was to provide the basis for examining the availability of special access facilities and the degree of competition in the market for special access facilities and services. The FCC noted that the National Broadband Plan recommended an analysis of the special access market in light of "the significant role special access circuits play in the availability and pricing of broadband service."[103]

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[98] Service Discontinuance Order, paragraph 16.

[99] *In the Matter of Implementation of Section 224 of the Act* and *A National Broadband Plan for Our Future*, WC Docket No. 07-254, GN Docket No. 09-51, Order and Further Notice of Proposed Rulemaking, adopted May 20, 2010, released May 20, 2010, paragraph 1 (Pole Attachment Order).

[100] Pole Attachment Order, paragraph 6.

[101] Pole Attachment Order, paragraph 19.

[102] Public Notice, *Data Requested in Special Access NPRM*, WC Docket No. 05-25 and RM-10593, released October 28, 2010 (Special Access Notice). Special access refers to high capacity circuits used to transmit data between two endpoints.

[103] National Broadband Plan, p. 48 and Special Access Notice.

Pursuant to the data request, information is to be provided to the FCC on or before January 27, 2011. The FCC intends to use the data collected to develop an analytical framework to determine whether the existing special access rules are working as intended, determine whether special access pricing flexibility rules are working as intended, and ensure that price cap rates for special access services remain just and reasonable.

Schools and Libraries Universal Service Program

On September 23, 2010, the FCC issued a Report and Order which implemented changes to the existing federal schools and libraries universal service program.[104] Those changes included modifications to the schools and libraries program that were designed to modernize and enhance broadband access provided through the program and to extend broadband access available through the program to persons other than students and teachers. Among other changes, the FCC directed that:

- Schools and libraries are permitted to lease unused transmission capacity from municipalities and other entities that are not telecommunications carriers.[105]
- There shall be no prohibition against use of services funded by the schools and libraries universal service program by community members outside of school hours.[106]
- Expanded and enhanced access to broadband services be made available in schools that serve populations facing unique challenges (such as schools for children with physical, cognitive, or behavioral disabilities).[107]
- Schools and libraries should be permitted to dispose of obsolete equipment without running afoul of the prohibition on reselling equipment and services purchased using E-rate funds.[108]

The American Recovery and Reinvestment Act of 2009

The American Recovery and Reinvestment Act of 2009 (ARRA), which was signed into law on February 17, 2009, included measures to enhance and modernize the nation's

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[104] *In the Matter of Schools and Libraries Universal Service Support Mechanism* and *A National Broadband Plan For Our Future*, CC Docket No. 02-6, GN Docket No. 09-51, Sixth Report and Order, adopted September 23, 2010, released September 28, 2010 (Schools and Libraries Order), available at: https://prodnet.www.neca.org/publicationsdocs/wwpdf/fcc10175.pdf

[105] Schools and Libraries Order, paragraph 11.

[106] Schools and Libraries Order, paragraph 22.

[107] Schools and Libraries Order, paragraph 31.

[108] Schools and Libraries Order, paragraphs 74-75.

infrastructure and directed the FCC to develop a plan to establish ubiquitous broadband availability to all U.S. citizens.[109] ARRA provided nearly $7.0 billion in broadband funding to the National Telecommunications and Information Administration (NTIA) and to the Rural Utilities Service (RUS) which was to be used to promote the deployment of broadband infrastructure and increase adoption of broadband technologies and usage in unserved and underserved areas.

To date, NTIA's Broadband Technology Opportunities Program has awarded 233 grants totaling $3.9 billion for broadband Internet access across the country.[110] NTIA's State Broadband and Development Program (SBDD), which implements the joint purposes of ARRA and the Broadband Data Improvement Act awarded grants totaling $4,755,768 to the Maryland Broadband Cooperative, which was designated by Governor O'Malley to lead Maryland's data collection, mapping and planning initiative.[111] The Maryland Broadband Cooperative formed a working partnership with Salisbury University, Towson University, Maryland Department of Business and Economic Development and Maryland's State Geographic Information Office to carry out these objectives.[112]

In addition, the Maryland Department of Information Technology has received funding from NTIA in the amount of $115,201,581 to support its One Maryland Broadband Network project.[113] That project links together and expands three existing independent networks including networkMaryland, the Inter-County Broadband Network (a 10-county consortium) and the Maryland Broadband Cooperative (a rural non-profit broadband provider), and intends to connect 1,000 community anchor institutions, construct over 1,200 miles of new fiber and provide direct Internet connections to approximately 260 public safety facilities in Maryland.[114]

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[109] American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, § 6001(k), 123 Stat. 115, 515-16 (2009), available at: http://www.recovery.gov/About/Pages/The_Act.aspx

[110] *Semiannual Report to Congress*, U.S. Department of Commerce, Office of Inspector General, September 2010, p. 5. Available at: http://www.oig.doc.gov/oig/reports/sar/2010-09-SAR.pdf

[111] Broadband Data Improvement Act (BDIA), Title I of Public Law 110-385, 122 Stat. 4096 (Oct. 10, 2008).

[112] See Maryland Broadband Map webpage at: http://www.mdbroadbandmap.org/About.aspx

[113] *Mikulski, O'Malley Announce Major Step Forward in Expanding Broadband to Marylanders*, September 17, 2010, available at: http://www.governor.maryland.gov/pressreleases/100917.asp

[114] See:
http://www.recovery.gov/Transparency/RecipientReportedData/Pages/statesummary.aspx?StateCode=MD

http://www.recovery.gov/Transparency/RecipientReportedData/pages/RecipientProjectSummary508.aspx?AwardIdSur=112600&AwardType=Grants

http://www.recovery.gov/Transparency/RecipientReportedData/pages/RecipientProjectSummary508.aspx?AwardIdSur=69682&AwardType=Grants

In addition, Maryland and other states have been the beneficiaries of other NTIA grants awarded to organizations for various projects including computer centers and computer training for ethnic, low income, minority and disabled populations. [115] In addition, at least one project has been funded which facilitates access to education, research, healthcare, public safety and government services.[116]

RUS has awarded over $3.5 billion in funding for 320 broadband infrastructure projects including a $4.4 million award that is intended to benefit Maryland's citizens.[117] As part of this funding, the West Virginia PCS Alliance, LC received an award amount of $3,268,518 which will be used to provide high-speed mobile broadband services to various rural and low income areas in Pennsylvania, West Virginia and Maryland.[118] Also, Hughes Network Systems received over $58 million in funding to offer satellite broadband service to rural residential customers nationwide.[119]

National Broadband Plan

In addition to providing funding for broadband development and deployment, ARRA also required the development of a National Broadband Plan, which will 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.[120] Section 6001(k)(2) of the ARRA states specifically that, "[t]he national broadband plan required by this section shall seek to ensure that all people of the United States have access to broadband capability."

The National Broadband Plan issued by the FCC on March 16, 2010 included a wide variety of policy options that the FCC intends to address that would increase broadband

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[115] See: http://www2.ntia.doc.gov/maryland

[116] See the University Corporation for Advanced Internet Development project referred to at http://www2.ntia.doc.gov/maryland.

[117] About the Recovery Act Broadband Initiatives Program, USDA, available at: http://www.rurdev.usda.gov/utp_bip.html and USDA Broadband Initiatives Program Federal Awards Through September 13, 2010 Allocated by State, USDA, available at: http://www.rurdev.usda.gov/supportdocuments/BIPAwardTotalsbyStateThrough09-13-10.pdf

[118] *Agricultural Secretary Vilsack Announces Over 120 Recovery Act Broadband Projects to Bring Jobs, Economic Opportunity to Rural Communities*, USDA News Release, August 5, 2010, available at: http://www.rurdev.usda.gov/STELPRD4005543.html

[119] *Vice President Biden Announces Recovery Act Investments in Broadband Projects to Bring Jobs, Economic Opportunity to Communities Nationwide*, USDA News Release, August 18, 2010, available at: http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=2010/08/0411.xml

[120] *Connecting America: The National Broadband Plan*, Federal Communications Commission, March 16, 2009. (Broadband Plan), available at: http://www.broadband.gov/plan/

availability, raise available broadband speeds, decrease broadband prices and increase the functionality of broadband facilities and services. The National Broadband Plan provides for a mechanism to test the actual speed of broadband connections and included over 200 other recommendations affecting the FCC, other government agencies and Congress.[121] As a roadmap for implementing the recommendations of the National Broadband Plan, the FCC issued the Broadband Action Agenda. According to that agenda, the FCC currently has over 60 open action items related to the implementation of the National Broadband Plan. See Attachment A.

The policy agenda outlined by the National Broadband Plan entails modifications to the federal universal service programs and the system of intercarrier compensation, both of which have been under review for several years. In addition, the Broadband Action Agenda intends to re-examine existing policies on special access services, develop guidelines on broadband speeds and network performance, and address cyber security and network integrity issues. Because many of these action items are currently under review, there are no definitive policy changes to report. Items 39 through 50 of the Broadband Action Agenda are most directly related to the deployment of IP-Enabled services including VoIP services in Maryland.[122] Those items are listed below along with a brief description of the item and the timeline for action on the item. Additional details on these items as well as a full listing of the Broadband Action Agenda are provided in Attachment A.

- ***Special Access Workshop and NPRM***

  To promote greater broadband deployment, competition, and investment. In late Q2 or early Q3 2010, the FCC scheduled a staff workshop to discuss the analytical framework the FCC should use to assess the effectiveness of its existing special access rules. Based on those findings, the FCC intends to propose a framework for assessing the effectiveness of the existing special access rules and identify any associated data collection requirements.

- ***Small Business Broadband and Wholesale Competition PN and NOI***

  To promote broadband affordability and choice for small businesses and other users. In Q2 2010, the FCC was scheduled to issue a public notice initiating development of a coherent, comprehensive framework for addressing a number of wireline wholesale competition policy issues that affect the small business market, including wholesale obligations raised in pending proceedings.

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[121] The Internet speed test is available at: http://www.testmyisp.com/

[122] Excellent summaries of the National Broadband Plan are available from other sources, including the Congressional Research Service. See http://assets.opencrs.com/rpts/R41324_20100709.pdf

- ***Tower Siting Declaratory Ruling***

  To speed the deployment of next-generation wireless networks while preserving local control over zoning and land use policies, in 2009 the FCC established timeframes of 90 days for collocations and 150 days for all other tower siting applications reviewed by state and local governments.

- ***Pole Attachments Order and FNPRM***

  To promote broadband deployment and new broadband entrants. In Q2 2010, the FCC issued a FNPRM to clarify and streamline broadband network operators' ability to obtain just, reasonable, and nondiscriminatory access to utility poles for the buildout of their networks.

- ***Rights-of-Way Task Force***

  To streamline and facilitate broadband providers' access to rights of way. In July 2010, the FCC initiated a task force to begin work on a rights-of-way task force with state, Tribal, and local policymakers to inventory current practices and policies and recommend fair practices and fees for broadband network operators' access to rights of way.

- ***Interconnection Clarification Order***

  In Q3 2010, the FCC recommended adopting an order clarifying the rights of competitive carriers to obtain interconnection with rural incumbent telephone companies in order to provide voice service.

- ***Technical Advisory Group on Speed and Performance***

  To develop guidelines for measuring actual broadband speed and performance and for disclosing information to consumers. A technical advisory group was launched in Q2 2010 to study and gather information on broadband speed and performance.

- ***Speed and Performance Measurement***

  To empower and protect consumers by collecting and reporting more accurate data on actual broadband speeds and performance. A voluntary 3rd party measurement program was launched in Q2 2010.

- ***Transparency and Disclosure NPRM***

  To empower consumers to make informed choices among broadband providers and plans, understand their bills, and decide whether to switch broadband providers. The FCC intends to propose rules regarding disclosure requirements for broadband service providers.

- ***Broadband Data NPRM***

  To better monitor and promote broadband competition. The FCC intends to propose rules to collect and analyze data on several key broadband metrics, including subscribership, actual availability, penetration, performance, prices, churn, and bundles, for both consumers and business customers.

- ***Mobile Wireless Competition Report***

  To better assess the state of competition in the mobile wireless industry. Information describing the broader mobile wireless ecosystem appeared in the 14th edition of the Mobile Wireless Competition Report which was issued on May 20, 2010.

- ***Broadband Map***

  To improve visibility into the availability of consumer broadband across America. The FCC is assisting NTIA in developing the National Broadband Map, including providing ongoing help to assemble data from state and territory partners and to generate an online, searchable, interactive version of the Map no later than Q1 2011.

Attachment A

Broadband Action Agenda

http://www.broadband.gov/plan/broadband-action-agenda.html

The 2010 Broadband Action Agenda focuses on four key goals:

Promote World-Leading Mobile Broadband Infrastructure and Innovation

- Seek to make an additional 500 megahertz (MHz) of spectrum available for mobile broadband within the next ten years.
- Increase opportunities for unlicensed devices and innovative spectrum access models.
- Expand incentives and mechanisms to reallocate or repurpose spectrum to higher-valued uses.
- Improve the transparency of spectrum allocation and utilization.

Accelerate Universal Broadband Access and Adoption, and Advance National Purposes Such as Education and Health Care

- Carry out a once-in-a-generation transformation of the Universal Service Fund over the next ten years to support broadband service. This will be achieved by converting existing subsidy mechanisms over time from "POTS" (plain old telephone service) to broadband, without increasing the size of the fund over the current baseline projection.
- Upgrade the E-Rate program, which has successfully connected public libraries and K-12 classrooms, benefiting students across the country by making broadband more accessible.
- Reform and upgrade the Rural Health Care Program to connect more public health facilities to high speed Internet facilities and to foster telemedicine applications and services. Create a Health Care Infrastructure Fund to support deployment of dedicated health care networks to underserved areas.
- Create a Connect America Fund to extend broadband service to unserved areas of the nation and to ensure affordable broadband service in high-cost areas where support is necessary.
- Create a Mobility Fund to bring all states to a baseline level of "3G" (or better) wireless coverage.

Foster Competition and Maximize Consumer Benefits Across the Broadband Ecosystem

- Enhance broadband and marketplace choices for small businesses and mobile providers by establishing consistent policy frameworks for special access and wholesale wireline competition.

- Improve consumer disclosures and FCC data collection to better monitor and promote broadband competition.

- Fulfill mandate from Congress to ensure that video navigation devices, such as smart video devices, are available to consumers in the marketplace, spurring innovation in home video devices and driving increased broadband adoption and utilization.

Advance Robust and Secure Public Safety Communications Networks

- Facilitate the creation of a nationwide interoperable public safety wireless broadband network.

- Promote cybersecurity and protect critical communications infrastructure.

- Aid the transition to next-generation 911 and alerting systems.

BROADBAND ACTION AGENDA

This Broadband Action Agenda lists more than 60 key actions, proceedings, and initiatives the Commission intends to undertake over the next year and beyond to implement the recommendations of the National Broadband Plan.[1] All dates refer to calendar (not fiscal) years and quarters, and are targets, partially contingent on external factors. Parentheticals following the title of each item provide the lead (in bold) and supporting FCC Bureaus and Offices responsible for that item (CGB = Consumer and Governmental Affairs Bureau, IB = International Bureau, MB = Media Bureau, OET = Office of Engineering and Technology, OSP = Office of Strategic Planning and Policy Analysis, PSHSB = Public Safety and Homeland Security Bureau, WCB = Wireline Competition Bureau, WTB = Wireless Telecommunications Bureau).

COMMON FCC REGULATORY PROCEEDINGS

The Agenda discusses a number of common FCC regulatory proceedings, including:

- Public Notice (PN): A PN is issued by the Commission or by one of its Bureaus and Offices to notify the public of an action taken or of the occurrence of an event, or to seek public comment on a matter the Commission is considering.

- Notice of Inquiry (NOI): A NOI is issued by the Commission to ask the public for information on, or to generate ideas about, a topic. A NOI is often followed by a Notice of Proposed Rulemaking.

- Notice of Proposed Rulemaking (NPRM): A NPRM is issued when the Commission is considering a change to its rules and regulations. The NPRM asks the public to comment on whether they agree with the proposed changes or to propose alternatives.

- Further Notice of Proposed Rulemaking (FNPRM): A FNPRM is issued by the Commission to seek further comment from the public when new issues arise in a proceeding after an NPRM has been issued, or the Commission desires additional public comment on issues raised in an NPRM.

- Order: An order is a decision of the Commission or one of its Bureaus and Offices.

- Report and Order (R&O): A R&O is a decision issued by the Commission to conclude a rulemaking proceeding. R&Os may adopt new rules, amend existing rules, or announce that rules will remain unchanged.

The Agenda includes four major categories of actions: (1) Promoting World-Leading Mobile Broadband Infrastructure and Innovation; (2) Accelerating Universal Broadband Access and Adoption, and Advancing National Purposes Such as Education and Health Care; (3) Fostering Competition and Maximizing Consumer Benefits Across the Broadband Ecosystem; and (4) Advancing Robust and Secure Public Safety Communications Networks.

A. Promote World-Leading Mobile Broadband Infrastructure and Innovation

The Plan recommends making an additional 500 megahertz (MHz) of spectrum available for mobile broadband within the next ten years. To achieve this and other key spectrum goals—including improving the transparency of spectrum allocation and utilization, increasing opportunities for unlicensed devices and innovative spectrum access models, and expanding incentives and mechanisms to reallocate or repurpose spectrum to higher-valued uses—the Commission intends to conduct more than a dozen actions, proceedings, and initiatives over the next year.

Unleash More Spectrum for Mobile Broadband

The Plan recommends that the FCC make 500 MHz newly available for broadband use within the next ten years, of which 300 MHz of high-value spectrum between 225 MHz and 3.7 gigahertz (GHz) should be made newly available for mobile use within five years.

Band	Key Actions and Timing	Megahertz Made Available for Terrestrial Broadband
WCS	2010—Order	20
AWS 2/3[2]	2010—Order 2011—Auction	60
D Block	2010—Order 2011—Auction	10
Mobile Satellite Services (MSS)	2010—NPRM 2010—L-Band and Big LEO Orders 2011—S-Band Order	90
Broadcast TV[3]	2010—NPRM 2011—Order 2012/13—Auction 2015—Band transition	120

Band	Key Actions and Timing	Megahertz Made Available for Terrestrial Broadband
Total		300

1. *2.3 GHz WCS/SDARS Order* (Rec. 5.8.1) (**OET**, WTB, IB): To enable robust mobile broadband use of 20 MHz of spectrum in the 2.3 GHz Wireless Communications Service (WCS) band while protecting neighboring incumbent operations, in Q2 2010 adopt an order revising technical rules.

2. *D Block Order/NPRM* (Recs. 5.8.2, 16.1) (**WTB**, PSHSB): To unleash spectrum for mobile broadband while fostering the deployment of a nationwide, interoperable, public safety wireless broadband network, in late Q2 or early Q3 2010 adopt an order and NPRM to pave the way for an auction of the 10 MHz of spectrum in the Upper 700 MHz D Block in the first half of 2011.

3. *MSS NPRM* (Rec. 5.8.4) (**OET**, IB, WTB): To promote investment and innovation in mobile broadband, in Q3 2010 propose rules that accelerate terrestrial broadband deployment in up to 90 MHz of Mobile Satellite Spectrum (MSS).

4. *Broadcast TV Spectrum Innovation NPRM* (Rec. 5.8.5) (**OET**, MB, WTB): To maximize value and promote innovative use of broadcast TV spectrum while preserving free, over-the-air broadcasting; protecting against interference; and ensuring vibrant and diverse media ownership, in Q3 2010 seek comment on proposals to increase spectrum efficiency and innovation.

5. *AWS Bands Analysis and Potential Order* (Rec. 5.8.3) (**WTB**, OET): To increase spectrum in the Advanced Wireless Services (AWS) bands for mobile broadband, by October 1, 2010 conclude a process with the National Telecommunications and Information Administration (NTIA), to determine whether a portion of the 1.7 GHz band currently used for federal government purposes can be paired with 20 MHz of spectrum in the AWS-3 band. Along with AWS-2 spectrum, this would make an additional 60 MHz of spectrum available for mobile broadband. If at the end of this inquiry there is not a strong possibility of reallocating federal spectrum, adopt final rules in Q4 2010 to auction the AWS-3 spectrum on a stand-alone basis in Q2 2011.

Increase Opportunities for Innovative Spectrum Access Models

Past FCC decisions to allow new spectrum access models have unleashed tremendous innovation, including technologies using unlicensed spectrum, such as WiFi, Bluetooth, and wireless smart meters. Building on these successes, the Plan recommends a series of steps to enable the next generation of spectrum access technologies to take root.

6. *TV White Spaces Reconsideration and Database Opinion and Order* (Rec. 5.12) (**OET**, MB, WTB): To accelerate the introduction of innovative products and services that access the "white spaces" spectrum between TV channels without interfering with other spectrum uses, in Q3 2010 complete the final rules for TV white space devices by resolving outstanding challenges to rules and selecting a device database manager.

7. *Identification of Contiguous Spectrum for Unlicensed Use* (Rec. 5.11) (**OET**, WTB): In conjunction with ongoing work on the strategic spectrum plan and triennial assessments, in Q2 2010 begin meetings with

stakeholders to collect initial ideas regarding candidate bands to make more spectrum available for unlicensed use, and by the end of 2010 make a recommendation regarding initiating a proceeding to free up a new, contiguous nationwide band for unlicensed use within the next ten years.

8. *Opportunistic Use of Spectrum NPRM* (Rec. 5.13) (**OET**, WTB, IB, MB, PSHSB): To enable more efficient use of spectrum by increasing opportunities for dynamic spectrum access technologies in different bands, in Q3 2010 propose rules to facilitate the use of smart radios in spectrum held by the FCC (such as in certain license areas where spectrum was not successfully auctioned) that would otherwise be unused.

9. *Experimental Licensing NPRM* (Rec. 5.14) (**OET**): To establish more flexible experimental licensing rules for spectrum, in Q4 2010 propose rules to facilitate R&D and help accelerate spectrum innovation.

Remove Barriers to Spectrum Utilization

The Plan recommends a number of other steps to remove barriers to efficient and productive spectrum use.

10. *Mobile Roaming Order and FNPRM* (Rec. 4.11) (**WTB**): To promote competition among mobile broadband providers, encourage investment, and increase consumer choice, in Q2 2010 adopt an order implementing rules to ensure the availability of reasonable automatic roaming arrangements for voice service and a Further Notice of Proposed Rulemaking seeking comment on roaming arrangements for mobile broadband services.

11. *Spectrum Sharing/Wireless Backhaul NPRM/NOI* (Recs. 5.9, 5.10) (**WTB**, OET): To enable more cost-effective use of spectrum and to help increase wireless broadband availability in both rural and urban areas, in Q3 2010 propose revising rules to allow for increased spectrum sharing among compatible point-to-point microwave services and greater flexibility in deploying wireless backhaul.

12. *Secondary Markets Internal Review* (Rec. 5.7) (**WTB**): To identify ways to increase incentives and mechanisms to reallocate or repurpose unused and underutilized spectrum, by the end of 2010 complete internal assessment of barriers to using secondary markets, including transferring, licensing, and leasing spectrum by existing licensees to third parties. The outcome of the review will determine whether further action is required in 2011.

Improve Data and Transparency Regarding Spectrum Allocation and Utilization

Spectrum policy depends on data and transparency around spectrum allocations, licensing, and utilization. The Plan lays out concrete recommendations for increasing the quality of data and analysis that undergirds informed spectrum policymaking, including by enabling outside parties – such as citizens, companies, investors, and other government agencies – to better understand and to provide more effective input into spectrum allocation decisions.

13. *Spectrum Dashboard 2.0* (Rec. 5.1) (**WTB**, OET, PSHSB, MB, IB): To improve the transparency of spectrum allocation, support spectrum policy planning, and promote a secondary market in spectrum, in March 2010 the FCC launched a beta Spectrum Dashboard

(http://reboot.fcc.gov/reform/systems/spectrum-dashboard). By early Q4 2010 improve and augment the beta release and launch Spectrum Dashboard 2.0.

14. *Strategic Spectrum Plan and Triennial Assessment* (Rec. 5.3) (**WTB**, OET, OSP): To ensure the FCC maintains and regularly publishes an up-to-date strategic plan for the nation's spectrum, beginning immediately and in coordination with NTIA maintain and continually update the strategic spectrum plan described in Chapter 5 of the Plan, preparing and publishing assessments of the supply, usage, and demand for spectrum – including potential sources of new spectrum – every three years.

B. Accelerate Universal Broadband Access and Adoption, and Advance National Purposes Such as Education and Health Care

The Plan provides an array of recommendations to accelerate universal broadband access and adoption – including for rural America; low-income Americans; schools and libraries; hospitals, clinics, doctors, and patients; Americans with disabilities; and Native Americans – and to advance national purposes such as education, health care, and energy efficiency.

Connect Rural America

To accelerate broadband access and adoption in rural America, the Plan recommends that the FCC comprehensively reform both contributions to and disbursements from the Universal Service Fund (USF) to support universal access to broadband service, including through creation of the Connect America Fund (CAF).

15. *USF Reform NPRM and NOI* (Rec. 8.2) (**WCB**, WTB): To begin the process of reforming the USF High-Cost Fund, in Q2 2010 propose specific common-sense reforms to the existing high-cost support mechanisms to identify funds that can be refocused toward broadband, and seek comment on the use of a model to determine efficient and targeted support levels for broadband deployment in high-cost areas.

16. *USF Merger Commitments Order* (Rec. 8.6) (**WCB**, WTB): To recover funds necessary for future broadband support, in Q2 2010 adopt an order resolving open issues and implementing longstanding commitments by Sprint and Verizon Wireless to eliminate – over multiple years – the substantial funding they receive for telephone service from the USF High Cost Fund.

17. *Mobility Fund NPRM* (Rec. 8.3) (**WTB**, WCB): To bring all states to a baseline level of 3G (or better) mobile availability, in late Q3 or early Q4 2010 propose rules creating a Mobility Fund to provide for one-time support for deployment of 3G (or better) networks in states that significantly lag the national average.

18. *USF Transformation FNPRM* (Recs. 8.2, 8.4-8.6, 8.12) (**WCB**, WTB): To continue the process of reforming the USF High-Cost Fund, in Q4 2010 propose rules to expedite deployment of broadband to unserved areas and establish the framework of the CAF to shift from supporting phone service to advancing access to broadband as well as voice.

19. *USF Contributions NPRM* (**WCB**, WTB): To stabilize support mechanisms for universal service programs, in Q4 2010 propose rules to reform the process for collecting contributions to the USF.

In addition, and closely related to reform of the USF High Cost Fund, the Plan recommends overhauling intercarrier compensation – the system of rules regulating payments among telecommunications carriers for exchanging traffic across networks – to rationalize and increase the system's efficiency, foster competition, and facilitate the transition from traditional circuit-switched voice networks to all-IP networks, ultimately benefiting consumers.

20. *Intercarrier Compensation NPRM* (Rec. 8.7, 8.11, 8.14) (**WCB**, WTB): To address inefficient and outmoded intercarrier payment rules, in Q4 2010 propose rules for long-term intercarrier compensation reform, including implementation of a glide path for reducing per-minute charges, establishment of appropriate cost-recovery mechanisms, and implementation of interim solutions to address arbitrage.

Connect Low-Income Americans

The Plan recommends increasing broadband adoption among low-income Americans by promoting affordability through reforms of the USF's Lifeline and Link-Up programs.

21. *Lifeline/Low-Income Joint Board Referral Order* (Rec. 9.1) (**WCB**, WTB): To make broadband more affordable for low-income households by facilitating expansion and integration of the Lifeline and Link-Up programs with state and local e-government efforts, in Q2 2010 refer certain program issues—including consumer eligibility, verification, and outreach—to the Federal-State Joint Board on Universal Service for specific recommendations to improve Lifeline and Link-Up in partnership with the states.

22. *Lifeline Pilot Roundtable* (Rec. 9.1) (**WCB**, WTB): To facilitate pilot programs to identify the most efficient and effective long-term broadband support mechanism for low-income Americans, in Q2 2010 hold a roundtable discussion on broadband Lifeline pilots.

23. *Lifeline Flexibility NPRM* (Rec. 9.1) (**WCB**, WTB): To give flexibility to low-income Americans eligible for Lifeline benefits, in Q3 2010 propose rules to require carriers to permit Lifeline customers to apply Lifeline discounts toward service offerings that include broadband as well as telephone service.

Connect Schools and Libraries

The Plan recommends upgrading the E-rate program, which has successfully connected public libraries and K-12 classrooms, to make broadband more accessible.

24. *E-rate Community Use Order* (**WCB**): To bolster use of broadband in schools, in February 2010 the FCC adopted an order and proposed rules enabling schools that receive funding through the USF's E-rate program for schools and libraries in funding years 2009 and 2010 to allow members of the general public to use the schools' Internet access during non-operating hours.

25. *E-rate Funding Year 2011 NPRM & Order* (Recs. 11.18, 11.19) (**WCB**): To cut red tape and make broadband more accessible, in Q2 2010 propose rules reforming the E-rate program and indexing the E-rate funding cap to inflation for funding year 2011 (July 1, 2011 – June 30, 2012). In Q3 or early Q4 2010 adopt rules to implement reforms proposed in Q2, benefiting students across the country.

26. *E-rate Funding Year 2012 NPRM* (Recs. 8.20, 11.15-17, 11.20-21, 11.23-24) (**WCB**): To continue the reform process initiated during funding year 2011, in Q1 2011 propose rules further reforming the E-rate program for funding year 2012 (July 1, 2012 – June 30, 2013).

Connect Hospitals, Clinics, Doctors, and Patients

The Plan includes a series of recommendations to connect more public health facilities to high-speed Internet; foster telemedicine devices, applications, and services; and create a Health Care Infrastructure Fund to support deployment of dedicated health care networks to underserved areas.

27. *Rural Health Care Pilot Program Extension Order* (Rec. 10.7) (**WCB**): To ensure that each program participant can provide the full consumer benefits of its project, which include robust e-health services and the exchange of electronic health records, the FCC extended Rural Health Care Pilot Program deadlines earlier this year.

28. *Rural Health Care Reform NPRM & Order* (Recs. 8.20, 10.6, 10.7) (**WCB**): To enable patients in rural, Tribal, and remote areas to have access to world-class healthcare without leaving their communities, in Q3 2010 propose rules to create a Health Care Infrastructure Fund to support deployment of dedicated health care networks to underserved areas and a Health Care Access Fund to connect hospitals and doctors. In Q4 2010 or early 2011, recommend adopting rules to implement these reforms..

29. *FCC/FDA Workshop and Public Notice on Converged Devices* (Rec. 10.3) (**OET**): To facilitate innovation and protect public health in the continued development of safe and effective "converged devices" (devices used for both communications and health care), the FCC has begun working with the Food and Drug Administration (FDA) to address and clarify the appropriate policy framework for these devices. In Q2 2010 the FCC and FDA will hold a joint staff workshop and issue a public notice seeking input on these issues.

Connect People with Disabilities

To better enable Americans with disabilities to experience the benefits of broadband, the Plan includes a number of recommendations to make hardware, software, services, and digital content more accessible and to make assistive technologies more affordable.

30. *Real-Time Text NOI, NPRM, and Order* (Rec. 9.10) (**CGB**, WCB, WTB, OET): To ensure that people with hearing or speech disabilities can naturally conduct conversations over communications networks to the same extent that voice users do and effectively communicate with 911 services, and to facilitate a transition away from outmoded analog-based services, in Q3 2010 issue a Notice of Inquiry to identify a reliable, interoperable, real-time text standard allowing users to see and receive text as it is typed in a digital and Internet-based environment. Following the inquiry, propose rules in Q4 2010 and adopt rules in early 2011.

31. *Internet Video and Device Accessibility NOI and NPRM* (Rec. 9.10) (**CGB**, WCB, WTB, MB): To ensure that people with hearing and vision disabilities have full access to video content distributed over the Internet, in Q4 2010 launch an inquiry into the accessibility of Internet video programming and devices

used to display such programming with closed captioning and video description, to be followed by proposed rules in 2011.

32. *Service and Equipment Accessibility NOI & NPRM* (Rec. 9.10) (**CGB**, WCB, WTB, OET): To ensure that people with disabilities have equal access to emerging broadband and digital products and services, in the first half of 2011 launch an inquiry into extending Section 255 accessibility rules to providers of advanced services and manufacturers of equipment used with these services, to be followed by proposed rules later in 2011.

33. *TRS Broadband NPRM* (Rec. 9.10) (**CGB**, WCB, WTB, OET): To ensure that people with hearing and speech disabilities have the tools, services, and assistive technology to achieve full and equal communication over distances, in the first half of 2011 propose rules to establish a new program for broadband services and assistive technologies under the Telecommunications Relay Services (TRS) program, and determine whether additional IP-enabled TRS services, such as Video Assisted Speech-to-Speech Service, could benefit people with disabilities.

34. *Accessibility and Innovation Forum* (Rec. 9.9) (**CGB**, WCB, WTB): To encourage and facilitate the ability of companies and independent inventors to develop products, services, and applications that are accessible to people with disabilities, in July 2010 establish an Accessibility and Innovation Forum, which will use a number of tools—including workshops, product demonstrations, and an information-sharing website—to share best practices and demonstrate new products, applications, and assistive technologies.

35. *Hearing Aid Compatibility Second Report and Order/FNPRM* (Rec. 9.10) (**WTB**, OET, CGB): To ensure that consumers who use hearing aids are able to effectively use new wireless broadband technologies that offer voice service, in Q3 2010 address outstanding issues in the ongoing Hearing Aid Compatibility rulemaking and seek comment on additional proposals to further extend Hearing Aid Compatibility rules to all devices that provide voice communications via a built-in speaker and are typically held to the ear, to the extent technologically feasible.

Connect Native American Communities

The Plan offers recommendations for ensuring effective coordination and consultation between Native American governments and multiple federal agencies and departments on a wide range of programs related to broadband issues.

36. *FCC-Native Nations Broadband Task Force* (Rec. 9.14) (**CGB**): To promote government-to-government relations with Native American governments, in Q2 2010 launch a task force to assist in developing and executing an FCC consultation policy, ensure that Native American concerns are considered in all FCC proceedings related to broadband, and develop additional recommendations for promoting broadband deployment and adoption on Native American lands. The task force will initially consist of senior FCC staff and then be expanded to include elected leaders or their appointees from Native Nations.

37. *Launch FCC Office of Native Affairs and Policy* (Rec. 9.14) (**CGB**): To more effectively address Native American issues, in Q2 2010 establish an FCC Office of Native Affairs and Policy with the requisite personnel, resources, and authority to consult regularly with Native American leaders and work with other

FCC bureaus and offices, as well as other Federal agencies and departments, on policies, programs, and initiatives impacting Native Americans and Native American interests.

38. *Spectrum on Tribal Lands NPRM* (Rec. 5.17) (**WTB**, CGB): To increase mobile opportunities for Tribal communities, in Q4 2010 propose rules to promote greater use of spectrum on Tribal lands, in coordination with Tribal governments.

C. Foster Competition and Maximize Consumer Benefits Across the Broadband Ecosystem

The Plan contains several recommendations to promote competition and empower consumers across the markets that make up the broadband ecosystem: network services, devices, and applications. These recommendations include removing barriers to key broadband inputs; improving consumer disclosures and FCC data collection to better monitor and promote broadband competition; and promoting consumer choice in video navigation devices, such as smart video devices.

Remove Barriers to Entry by Streamlining Access to Key Broadband Inputs

The Plan recommends developing a coherent and effective policy framework for taking expedited action to ensure widespread availability of key broadband inputs and achieve the FCC's goal of robust competition in business and consumer broadband markets.

39. *Special Access Workshop and NPRM* (Rec. 4.8) (**WCB**, WTB, OSP): To promote greater broadband deployment, competition, and investment, in late Q2 or early Q3 2010 hold a staff workshop to discuss the analytical framework the FCC should use to assess the effectiveness of its existing special access rules. These rules generally govern the terms under which certain dedicated, high-capacity links may be purchased from incumbent carriers to serve business locations and cell phone towers. In late Q3 or early Q4 2010, propose a framework for assessing the effectiveness of the existing special access rules and identify any associated data collection requirements—critical steps toward ensuring that rates, terms, and conditions for special access services are just and reasonable, as required by law.

40. *Small Business Broadband and Wholesale Competition PN and NOI* (Recs. 4.7, 4.9) (**WCB**): To promote broadband affordability and choice for small businesses and other users, in Q2 2010, issue a public notice initiating development of a coherent, comprehensive framework for addressing a number of wireline wholesale competition policy issues that affect the small business market, including wholesale obligations raised in pending proceedings. By the end of 2010, adopt an NOI seeking comment on application of an analytical framework for these wholesale competition issues.

41. *Tower Siting Declaratory Ruling* (**WTB**): To speed the deployment of next-generation wireless networks while preserving local control over zoning and land use policies, in 2009 the FCC established timeframes of 90 days for collocations and 150 days for all other tower siting applications reviewed by state and local governments.

42. *Pole Attachments Order and FNPRM* (Recs. 6.1-6.4) (**WCB**): To promote broadband deployment and new broadband entrants, in Q2 2010, recommend adopting an order and FNPRM to clarify and streamline broadband network operators' ability to obtain just, reasonable, and nondiscriminatory access to utility poles for the build out of their networks.

43. *Rights-of-Way Task Force* (Recs. 6.4, 6.6) (**CGB**, WCB): To streamline and facilitate broadband providers' access to rights of way, in July 2010 begin work on a rights-of-way task force with state, Tribal, and local policymakers to inventory current practices and policies and recommend fair practices and fees for broadband network operators' access to rights of way. Use recommendations from the task force in a subsequent formal proceeding to seek industry-wide comment on collecting and making available more information about rights of way and setting guidelines for rights-of-way access.

44. *Interconnection Clarification Order* (Rec. 4.10) (**WCB**): In Q3 2010, recommend adopting an order clarifying the rights of competitive carriers to obtain a key input: interconnection with rural incumbent telephone companies in order to provide voice service, often as part of a bundle with broadband and/or pay television service. This action will increase regulatory certainty and enhance the economic viability of broadband entry that depends on capturing voice revenues from subscribers, which will benefit rural consumers in particular.

Improve Data Collection, Analysis, and Disclosure to Promote Broadband Competition and Protect and Empower Consumers

The Plan seeks to bolster competition and consumer benefits by developing data-driven competition policies for broadband services and ensuring that consumers have the information they need to make decisions that maximize benefits from these services.

45. *Technical Advisory Group on Speed and Performance* (Recs. 4.3, 4.4, 4.6) (**CGB**, OET, WCB): To develop guidelines for measuring actual broadband speed and performance and for disclosing information to consumers, in Q2 2010 launch a technical advisory group on speed and performance, including representatives from industry and consumer groups.

46. *Speed and Performance Measurement* (Rec. 4.2, 4.4) (**CGB**, WTB, WCB, OET): To empower and protect consumers by collecting and reporting more accurate data on actual broadband speeds and performance, in Q2 2010 launch a voluntary 3rd party measurement program to sample broadband performance for 10,000 households nationwide, which will inform the Transparency and Disclosure NPRM and culminate in the first "State of Broadband Report" in Q3 2010.

47. *Transparency and Disclosure NPRM* (Rec. 4.5, 4.6) (**CGB**, WCB, WTB, OET): To empower consumers to make informed choices among broadband providers and plans, understand their bills, and decide whether to switch broadband providers, in late Q3 or early Q4 2010 propose rules regarding disclosure requirements for broadband service providers.

48. *Broadband Data NPRM* (**WCB**, WTB, OSP): To better monitor and promote broadband competition, in Q4 2010 propose rules to collect and analyze more detailed and accurate industry-wide data on several key broadband metrics, including subscribership, actual availability, penetration, performance, prices, churn, and bundles, for both consumers and business customers. Propose methods by which collected data can be made available to the public, academic researchers, and others to enable more detailed market and competition analyses. These efforts will include coordination with Tribal governments regarding improved data collection.

49. Mobile Wireless Competition Report (Rec. 4.2) (**WTB**, OSP): To better assess the state of competition in the mobile wireless industry, in Q2 2010 issue the 14th edition of the Mobile Wireless Competition

Report, which will expand upon previous FCC analyses by considering the broader mobile wireless ecosystem, including how upstream and downstream segments affect competition in the provision of mobile wireless services to consumers.

50. *Broadband Map* (Rec. 4.2) (**OSP**, WCB, WTB): To improve visibility into the availability of consumer broadband across America, the FCC is assisting NTIA in developing the National Broadband Map, including by providing ongoing help to assemble data from state and territory partners and to generate an online, searchable, interactive version of the Map no later than Q1 2011.
* *Spectrum Dashboard 2.0* (Rec. 5.1) (**WTB**, OET, PSHSB, MB, IB) [See #13 above]

Unleash Innovation and Competition in Video Devices

As online video becomes increasingly important for driving broadband usage and adoption, the Plan recommends steps that will foster increased innovation in smart video devices to bring more competition and choice for consumers.

51. *Smart Video Devices NOI & NPRM* (Rec. 4.10) (**MB**, OET): To spur innovation and driving increased broadband adoption and utilization, in Q2 2010 seek comment on best approaches to assure the commercial availability of smart video devices and other equipment used to access the services of multi-channel video programming distributors. Propose rules in Q4 2010 providing an approach, to be implemented by the end of 2012, to enable consumers to buy smart video devices at retail that can be used with any MVPD and that can fully integrate pay television services, including two-way services, with video received over the Internet.

52. *CableCARD NPRM* (Recs. 4.9, 4.11) (**MB**, OET): To facilitate the provision and use of CableCARD devices while a more fundamental revision of the FCC's rules for smart video devices is under way, in Q2 2010 propose rules to address a number of issues to improve the working of the CableCARD framework.

D. Advance Robust and Secure Public Safety Communications Networks

The Plan recommends a series of actions to help ensure that broadband can support public safety and homeland security, respond swiftly when emergencies occur, and provide the public with better ways of calling for help and receiving emergency information. These recommendations include facilitating creation of a nationwide interoperable public safety mobile broadband network; ensuring our broadband networks are safe and secure; and modernizing our emergency communications and alerting systems.

Facilitate Creation of a Nationwide Interoperable Public Safety Mobile Broadband Network

The Plan recommends supporting the deployment of a nationwide, interoperable public safety mobile network, and ensuring that public safety has priority access to commercial wireless networks during times of emergency.

53. *ERIC Public Safety Interoperability Order* (Rec. 16.1) (**PSHSB**): To develop and coordinate common standards for interoperability and operating procedures (including roaming, priority access, authentication, and encryption) – enabling the seamless exchange of public safety communications across

a nationwide broadband network – in Q2 2010 release an order creating an Emergency Response Interoperability Center (ERIC) within the FCC's Public Safety and Homeland Security Bureau.

54. *700 MHz Waiver Petitions* (**PSHSB**, WTB, OET): To enable early deployment of local and regional public safety wireless broadband networks, in late Q2 or early Q3 2010 recommend adopting orders resolving pending waiver petitions from various public safety entities seeking early deployment of networks in the 700 MHz public safety broadband spectrum.

55. *700 MHz Public Safety Order/FNPRM* (Rec. 16.1) (**PSHSB**, WTB, OET): To accelerate deployment of a nationwide, interoperable broadband network using spectrum already licensed for public safety, in Q3 2010, adopt an order and Further Notice of Proposed Rulemaking resolving outstanding issues and establishing final rules governing build out and operating obligations for public safety spectrum.
* *D Block Order/NPRM* (Recs. 5.8.2, 16.1) (**WTB**, PSHSB) [See #2, above]

56. *Public Safety Roaming and Priority Access NPRM* (Rec. 16.1) (**WTB**, PSHSB): To enable public safety communications in areas where public safety broadband wireless networks are unavailable or at capacity, in late Q2 or early Q3 2010 propose rules to provide public safety with roaming and priority access service at reasonable rates on commercial networks.

Promote Cybersecurity and Protect Critical Communications Infrastructure

The Plan recommends safeguards for protecting against cyberattacks and ensuring that our nation's communications infrastructure is robust and able to withstand physical failure.

57. *Service Outage and Homeland Security Workshop and NPRM* (Rec. 16.6) (**PSHSB**, OET, WCB, WTB, IB): To help ensure a better response to service outages affecting IP-based networks and prevent future outages, in Q2 2010 hold a staff workshop regarding critical infrastructure and information collection and issue a subsequent public notice. In Q4 2010 propose rules to extend the FCC's Part 4 outage reporting rules (currently applicable to communications service providers) to broadband Internet service providers and interconnected VoIP providers.

58. *Cybersecurity Certification NOI* (Rec. 16.7) (**PSHSB**, WTB, OET, WCB): To promote more vigilant network security and provide consumers with more information about their providers' cybersecurity practices, in Q2 2010, initiate a proceeding to create a voluntary cybersecurity certification program that creates market incentives for communications service providers to upgrade their network cybersecurity. This proceeding will also examine additional voluntary incentives that could improve cybersecurity and improve education about cybersecurity issues, and may be followed by a rulemaking in 2011.

59. *Survivability NOI* (Rec. 16.10) (**PSHSB**, OET, WTB, WCB): To ensure the resiliency of broadband networks in times of disaster, in Q2 2010, seek comment on the present state of survivability and potential measures to reduce vulnerability to network failures, and issue further requests for comment as required in 2011.

60. *Back-Up Power NOI* (**PSHSB**, OET, WTB): To ensure survivability of service during large-scale disasters, in Q4 2010 begin an inquiry to examine ways to ensure that commercial communications service providers, including broadband providers, have adequate measures in place, such as back-up

power. Based on the record developed in the inquiry, the FCC will initiate further proceedings in 2011 as necessary.

61. *Network Reliability NOI* (Rec. 16.12) (**PSHSB**, OET, WTB, WCB): To determine what actions, if any, the FCC should take to bolster the reliability of broadband infrastructure, in Q1 2011 begin an inquiry to better understand the reliability standards used in broadband networks. The proceeding will examine the standards and practices applied to broadband infrastructure at all layers, from facilities to applications, and may lead to further inquiries in 2011 as necessary.

Promote Development and Implementation of Next-Generation 911 (NG911) and Alerting Systems

The Plan recommends steps to help enable the nation's 911 and emergency alert systems use new communications technologies and devices beyond traditional phone and broadcast platforms.

62. *Location Accuracy FNPRM* (Rec. 16.15) (**PSHSB**, OET, WTB): To improve location accuracy and automatic location identification requirements for next-generation 911, in Q3 2010 adopt a Further Notice of Proposed Rulemaking to consider how NG911—the next step for the nation's emergency communications system, incorporating text messaging, photos and videos, and other data communications—affects location accuracy and automatic location identification requirements. The FNPRM will be followed by further proceedings in 2011 as necessary.

63. *NG911 NOI* (Rec. 16.15) (**PSHSB**, OET, WCB, WTB): To promote the effective development of next-generation 911, in Q4 2010 begin an inquiry to address how NG911 can accommodate communications technologies, networks, and architectures beyond traditional voice-centric devices, and how public expectations will evolve regarding the communications platforms the public will rely on to request emergency services. The NOI will be followed by further proceedings in 2011 as necessary.

64. *Alerting NOI* (Rec. 16.16) (**PSHSB**, WTB, WCB, OET): To promote the effective development and implementation of a next-generation alerting system, in Q1 2011 begin an inquiry examining issues regarding development of a multiple-platform, redundant, next-generation alert system that includes delivery of emergency alerts throughout the nation via broadband. After this proceeding, the FCC will initiate further proceedings as required, as well as pursuing follow-on work with our federal partners.

[1] The Agenda focuses on 2010 items but discusses 2011 items where appropriate; it principally addresses formal notice-and-comment proceedings and generally does not include informal actions the Commission will take to implement Plan recommendations. The Agenda is not a comprehensive agenda for the Commission and does not include key ongoing and upcoming FCC initiatives that lie beyond the scope of the Plan's recommendations.

[2] Timing and quantity depends on outcome of the investigation into possibility of reallocating federal spectrum in the 1755-1850 MHz band.

[3] Timing and quantity depends on Congressional action to grant incentive auction authority as well as voluntary participation of broadcasters in an auction.