

be more competitive, and thus will provide greater benefits to consumers, as a result of our decision to support broadband networks, regardless of regulatory classification.

69. By exercising our authority under section 706 in this manner, we further Congress's objective of "accelerat[ing] deployment" of advanced telecommunications capability "to all Americans."<sup>92</sup> Under our approach, federal support will not turn on whether interconnected VoIP services or the underlying broadband service falls within traditional regulatory classifications under the Communications Act. Rather, our approach focuses on accelerating broadband deployment to unserved and underserved areas, and allows providers to make their own judgments as to how best to structure their service offerings in order to make such deployment a reality.

70. We disagree with commenters who assert that we lack authority under section 706(b) to support broadband networks.<sup>93</sup> While 706(a) imposes a general duty on the Commission to encourage broadband deployment through the use of "price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment," section 706(b) is triggered by a specific finding that broadband capability is not being "deployed to all Americans in a reasonable and timely fashion." Upon making that finding (which the Commission has done<sup>94</sup>), section 706(b) requires the Commission to "take immediate action to accelerate" broadband deployment. Given the statutory structure, we read section 706(b) as conferring on the Commission the additional authority, beyond what the Commission possesses under section 706(a) or elsewhere in the Act, to take steps necessary to fulfill Congress's broadband deployment objectives. Indeed, it is hard to see what additional work section 706(b) does if it is not an independent source of statutory authority.<sup>95</sup>

71. We also reject the view that providing support for broadband networks under section 706(b) conflicts with section 254, which defines universal service in terms of telecommunications services.<sup>96</sup> Information services are not excluded from section 254 because of any policy judgment made by Congress. To the contrary, Congress contemplated that the federal universal service program would promote consumer access to both advanced telecommunications and advanced information services "in all

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<sup>92</sup> 47 U.S.C. § 1302(b).

<sup>93</sup> See, e.g., Cellular South Comments at 9; RTCC Comments at 12.

<sup>94</sup> See *supra* para. 64.

<sup>95</sup> The legislative history supports our conclusion that sections 706(a) and (b) are independent sources of authority. The relevant Senate Report explained that the provisions of section 304 (the Senate analogue to section 706) are "intended to ensure that one of the primary objectives of the [1996 Act]—to accelerate deployment of advanced telecommunications capability—is achieved," and stressed that these provisions are "a necessary fail-safe" to guarantee that Congress's objective is reached. S. Rep. No. 104-23, at 50–51 (1995). As we previously explained, "[i]t would be odd indeed to characterize Section 706(a) as a 'fail-safe' that 'ensures' the Commission's ability to promote advanced services if it conferred no actual authority." *Preserving the Open Internet*, 25 FCC Rcd 17905, 17970 (2010). Moreover, section 304(a) of the Senate bill would have required the Commission, upon a finding that broadband deployment is not reasonable and timely, to "take immediate action *under this section*," S. 652, § 304(b) (1995) (emphasis added), which necessarily related back to the Commission's authority conferred by section 304(a) of the bill to promote broadband deployment through "price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment." Ultimately, however, Congress did not define the authority conferred by section 706(b) by reference to section 706(a). Instead, Congress instructed the Commission to go beyond section 706(a) if it found that broadband was not being deployed in the United States on a reasonable and timely basis and to "take immediate action" to correct that failure.

<sup>96</sup> See Cellular South *USF/ICC Transformation NPRM* Comments at 16-20; RTCC Apr. 18, 2011 Comments at 5.

regions of the Nation.”<sup>97</sup> When Congress enacted the 1996 Act, most consumers accessed the Internet through dial-up connections over the PSTN,<sup>98</sup> and broadband capabilities were provided over tariffed common carrier facilities.<sup>99</sup> Interconnected VoIP services had only a nominal presence in the marketplace in 1996. It was not until 2002 that the Commission first determined that one form of broadband – cable modem service – was a single offering of an information service rather than separate offerings of telecommunications and information services,<sup>100</sup> and only in 2005 did the Commission conclude that wireline broadband service should be governed by the same regulatory classification.<sup>101</sup> Thus, marketplace and technological developments and the Commission’s determinations that broadband services may be offered as information services have had the effect of removing such services from the scope of the explicit reference to “universal service” in section 254(c). Likewise, Congress did not exclude interconnected VoIP services from the federal universal service program; indeed, there is no reason to believe it specifically anticipated the development and growth of such services in the years following the enactment of the 1996 Act.

72. The principles upon which the Commission “shall base policies for the preservation and advancement of universal service” make clear that supporting networks used to offer services that are or may be information services for purposes of regulatory classification is consistent with Congress’s overarching policy objectives.<sup>102</sup> For example, section 254(b)(2)’s principle that “[a]ccess to advanced telecommunications and *information services* should be provided in all regions of the Nation” dovetails comfortably with section 706(b)’s policy that “advanced telecommunications capability [be] deployed to all Americans in a reasonable and timely fashion.”<sup>103</sup> Our decision to exercise authority under Section 706 does not undermine section 254’s universal service principles, but rather ensures their fulfillment. By contrast, limiting federal support based on the regulatory classification of the services offered over broadband networks as telecommunications services would exclude from the universal service program providers who would otherwise be able to deploy broadband infrastructure to consumers. We see no basis in the statute, the legislative history of the 1996 Act, or the record of this proceeding for concluding that such a constricted outcome would promote the Congressional policy objectives underlying sections 254 and 706.

73. Finally, we note the limited extent to which we are relying on section 706(b) in this proceeding. Consistent with our longstanding policy of minimizing regulatory distinctions that serve no universal service purpose, we are not adopting a separate universal service framework under section 706(b). Instead, we are relying on section 706(b) as an alternative basis to section 254 to the extent necessary to ensure that the federal universal service program covers services and networks that could be used to offer information services as well as telecommunications services. Carriers seeking federal support must still comply with the same universal service rules and obligations set forth in sections 254

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<sup>97</sup> 47 U.S.C. § 254(b)(2).

<sup>98</sup> *1997 Universal Service Order*, 12 FCC Rcd at 8622-23, para. 83.

<sup>99</sup> *See GTE Telephone Operating Cos.*, 13 FCC Rcd 22466 (1998).

<sup>100</sup> *Inquiry Concerning High-Speed Access to the Internet Over Cable & Other Facilities*, GN Docket No. 00-185, CS Docket No. 02-52, Declaratory Ruling and Notice of Proposed Rulemaking, 17 FCC Rcd 4798 (2002), *aff’d sub nom. Nat’l Cable & Telecomms. Ass’n v. Brand X Internet Servs.*, 545 U.S. 967, 978 (2005).

<sup>101</sup> *Wireline Broadband Order*, 20 FCC Rcd 14853.

<sup>102</sup> 47 U.S.C. § 254(b)(2), (3).

<sup>103</sup> Section 214(e)(1) requires services supported by the universal service mechanisms to be offered throughout a carrier’s designated service area. This requirement, coupled with the rules we adopt in this Order, will further promote the Commission’s goal of bringing broadband capability to “all Americans.”

and 214, including the requirement that such providers be designated as eligible to receive support, either from state commissions or, if the provider is beyond the jurisdiction of the state commission, from this Commission.<sup>104</sup> In this way, we ensure that our exercise of section 706(b) authority will advance, rather than detract from, the universal service principles established under section 254 of the Act.

## VI. PUBLIC INTEREST OBLIGATIONS

74. Universal service support is a public-private partnership to preserve and advance access to modern communications networks. ETCs that benefit from public investment in their networks must be subject to clearly defined obligations associated with the use of such funding.<sup>105</sup>

75. Consistent with the Commission's longstanding practice, we continue to require all USF recipients to offer voice service. In addition, as a condition of receiving support, recipients must now also offer broadband service. In this section, we define the requirements for voice and describe in concept the broadband service obligations that apply to all fund recipients. We defer to subsequent sections discussion of the specific broadband requirements that apply to each of our new or reformed funding mechanisms according to each mechanism's particular purpose. Importantly, these reforms do not displace existing state requirements for voice service, including state COLR obligations. We will continue to work in partnership with the states on the future of such requirements as we consider the future of the PSTN.

### A. Voice Service

76. *Background.* Pursuant to section 254 of the Act, the Commission must establish the definition of the services that are supported by the federal universal service mechanisms.<sup>106</sup> In accordance with this mandate, in 1997, the Commission defined the supported services in functional terms as: voice grade access to the public switched network; local usage; dual tone multi-frequency (DTMF) signaling or its functional equivalent; single-party service or its functional equivalent; access to emergency services; access to operator services; access to interexchange service; access to directory assistance; and toll limitation to qualifying low-income consumers.<sup>107</sup> However, the telecommunications marketplace has changed significantly since 1997. For example, the "distinction between local and long distance calling is becoming irrelevant in light of flat rate service offerings that do not distinguish between local and toll calls."<sup>108</sup> In light of the changes in technology and in the marketplace, the Commission sought comment on simplifying the core functionalities of the supported services into the overarching concept, "voice telephony service."<sup>109</sup>

77. *Discussion.* We determine that it is appropriate to describe the core functionalities of the supported services as "voice telephony service." Some commenters support redefining the voice

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<sup>104</sup> See 47 U.S.C. § 214(e)(1), (2), (6).

<sup>105</sup> Throughout this Order, unless otherwise specified, the term "ETC" does not include ETCs that are designated only for the purposes of the low income program.

<sup>106</sup> 47 U.S.C. § 254(c)(1).

<sup>107</sup> 47 C.F.R. § 54.101(a)(1)-(9); see also *In the Matter of Federal State Joint Board on Universal Service Order*, Report and Order, CC Docket No. 96-45, 12 FCC Rcd 8776, 8810, para. 61 (1997) (defining supported services).

<sup>108</sup> *In the Matter of Federal State Joint Board of Lifeline and Link Up Reform and Modernization*, Notice, WC Docket No. 11-42, 26 FCC Rcd 2770, 2844, para. 242 (2011) (*2011 Lifeline/Link Up NPRM*).

<sup>109</sup> *USF/ICC Transformation NPRM*, 26 FCC Rcd 4590, para. 96. The Commission also sought comment on whether it should modify the definition of voice grade access to the public switched network and whether ETCs should still be required to provide operator services and directory assistance. *Id.* at para. 77.

functionalities as voice telephony services,<sup>110</sup> while others oppose the change, arguing that the current list of functionalities remains important today, the term “voice telephony” is too vague, and such a modification may result in a lower standard of voice service.<sup>111</sup> Given that consumers are increasingly obtaining voice services over broadband networks as well as over traditional circuit switched telephone networks,<sup>112</sup> we agree with commenters that urge the Commission to focus on the functionality offered, not the specific technology used to provide the supported service.<sup>113</sup>

78. The decision to classify the supported services as voice telephony should not result in a lower standard of voice service: Many of the enumerated services are universal today, and we require eligible providers to continue to offer those particular functionalities as part of voice telephony. Rather, the modified definition simply shifts to a technologically neutral approach, allowing companies to provision voice service over any platform, including the PSTN and IP networks.<sup>114</sup> This modification will benefit both providers (as they may invest in new infrastructure and services) and consumers (who reap the benefits of the new technology and service offerings). Accordingly, to promote technological neutrality while ensuring that our new approach does not result in lower quality offerings, we amend section 54.101 of the Commission rules to specify that the functionalities of eligible voice telephony services include voice grade access to the public switched network or its functional equivalent; minutes of use for local service provided at no additional charge to end users;<sup>115</sup> toll limitation to qualifying low-income consumers; and access to the emergency services 911 and enhanced 911 services to the extent the local government in an eligible carrier's service area has implemented 911 or enhanced 911 systems.<sup>116</sup>

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<sup>110</sup> See T-Mobile/USF/ICC Transformation NPRM Comments at 7; New America Foundation, et al. *USF/ICC Transformation NPRM* Comments at 10, Frontier *USF/ICC Transformation NPRM* Comments at 19, State Members *USF/ICC Transformation NPRM* Comments at 130–31; see also Cricket 2011 *Lifeline/Link Up NPRM* Comments at 15-16; FPSC 2011 *Lifeline/Link Up NPRM* Comments at 29.

<sup>111</sup> Frontier *USF/ICC Transformation NPRM* Comments at 55-6 (“maintaining that the requirement that USF recipients provide voice grade access to the public switched network... is essential to ensure that robust voice services continue to be available to the American public”); Alaska 2011 *Lifeline/Link Up NPRM* Comments at 8-9 (arguing that the redefining or eliminating the current supported services would lead to lower standards of voice service); Indiana 2011 *Lifeline/Link Up NPRM* Comments at 12 (stating that local usage and single-party service are important functionalities); NASUCA 2011 *Lifeline/Link Up NPRM* Comments at 26-7 (stating that the term “voice telephony” is unnecessarily vague); New Jersey Rate Counsel 2011 *Lifeline/Link Up NPRM* Comments at 24.

<sup>112</sup> See *supra* at para. 63. The nine enumerated voice functionalities historically have been delivered over Time Division Multiplexing (TDM), a method of transmitting and receiving voice signals over the PSTN.

<sup>113</sup> Windstream *USF/ICC Transformation NPRM* Comments at 20.

<sup>114</sup> In particular, we find that changes in technology and the marketplace allow for elimination of the requirements to provide single-party service. In its comments, CWA stated that the Commission should continue to require recipients of USF or CAF support to provide operator services and directory assistance to customers. See CWA Comments at 2. However, while we encourage carriers to continue to offer operator services and directory assistance, we do not mandate that ETCs provide operator services or directory assistance; we find the importance of these services to telecommunications consumers has declined with changes in the marketplace.

<sup>115</sup> We have never prescribed a minimum number of local access minutes, and we see no reason to do so now. We do, however, make a non-substantive revision to clarify the intent of the rule (section 54.101). Specifically, we replace “provided free of charge to end users” with “provided at no additional charge to end users.” When the Commission adopted this rule, it sought to ensure that consumers would not pay additional charges for message units on top of the rate charged for basic local service. See *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd 8776, 8813, para. 67 (1997) (*Universal Service First Report and Order*) (subsequent history omitted).

<sup>116</sup> The Commission recently sought comment on ways to modernize the current voice-based 911 system to a Next Generation 911 (NG911) system that will enable the public to send texts, photos, videos, and other data to 911 call (continued...)

79. Today, all ETCs, whether designated by a state commission or this Commission, are required to offer the supported service -- voice telephony service -- throughout their designated service area. ETCs also must provide Lifeline service throughout their designated service area. In the FNPRM, we seek comment on modifying incumbent ETCs' obligations to provide voice service in situations where the incumbent's high-cost universal service funding is eliminated, for example as a result of a competitive bidding process in which another ETC wins universal support for an area and is subject to accompanying voice and broadband service obligations.

80. As a condition of receiving support, we require ETCs to offer voice telephony as a standalone service throughout their designated service area.<sup>117</sup> As indicated above, ETCs may use any technology in the provision of voice telephony service.

81. Additionally, consistent with the section 254(b) principle that "[c]onsumers in all regions of the Nation . . . should have access to telecommunications and information services . . . that are available at rates that are reasonably comparable to rates charged for similar services in urban areas,"<sup>118</sup> ETCs must offer voice telephony service, including voice telephony service offered on a standalone basis, at rates that are reasonably comparable to urban rates.<sup>119</sup> We find that these requirements are appropriate to help ensure that consumers have access to voice telephony service that best fits their particular needs.<sup>120</sup>

82. We decline to preempt state obligations regarding voice service, including COLR obligations, at this time.<sup>121</sup> Proponents of such preemption have failed to support their assertion that state service obligations are inconsistent with federal rules and burden the federal universal service mechanisms, nor have they identified any specific legacy service obligations that represent an unfunded mandate that make it infeasible for carriers to deploy broadband in high-cost areas.<sup>122</sup> Carriers must therefore continue to satisfy state voice service requirements.

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centers; ETCs will be required to comply with NG911 rules upon implementation by state and local governments. *See Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, Notice of Proposed Rulemaking; PS Docket Nos. 11-153, 10-255, Notice of Proposed Rulemaking, FCC 11-134 (rel. Sep. 22, 2011).

<sup>117</sup> With respect to "standalone service," we mean that consumers must not be required to purchase any other services (e.g., broadband) in order to purchase voice service. *See California Commission USF/ICC Transformation NPRM Comments at 10; Greenlining USF/ICC Transformation NPRM Comments at 8; Missouri Commission USF/ICC Transformation NPRM Comments at 7; NASUCA USF/ICC Transformation NPRM Comments at 38.*

<sup>118</sup> 47 U.S.C. § 254(b)(3).

<sup>119</sup> *See Qwest I*, 258 F.3d at 1199-1200.

<sup>120</sup> *See AT&T USF/ICC Transformation NPRM Comments at 103* (indicating that competition will ensure that customers have multiple options for voice service). *But see Frontier USF/ICC Transformation NPRM Comments at 17-9* (stating that many Americans will have access to broadband but will not use it, so fund recipients must continue to provide standalone voice service).

<sup>121</sup> ABC Plan Proponents Attach. 1 at 13.

<sup>122</sup> ABC Plan Proponents Attach. 5 at 8. *See, e.g., AT&T USF/ICC Transformation NPRM Comments at 61-69, T-Mobile USF/ICC Transformation NPRM Comments at 8, Verizon USF/ICC Transformation NPRM Reply at 44* (each opposing COLR obligations). *But see Alaska Commission USF/ICC Transformation NPRM Comments at 24-5, NARUC USF/ICC Transformation NPRM Comments at 17, South Dakota Commission USF/ICC Transformation NPRM Reply at 11, State Members USF/ICC Transformation NPRM Comments at 136, Texas Telephone USF/ICC Transformation NPRM Comments at 11-3.*

83. That said, we encourage states to review their respective regulations and policies in light of the changes we adopt here today and revisit the appropriateness of maintaining those obligations for entities that no longer receive federal high-cost universal service funding, just as we intend to explore the necessity of maintaining ETC obligations when ETCs no longer are receiving funding. For example, states could consider providing state support directly to the incumbent LEC to continue providing voice service in areas where the incumbent is no longer receiving federal high-cost universal service support or, alternatively, could shift COLR obligations from the existing incumbent to another provider who is receiving federal or state universal service support in the future.

84. *Voice Rates.* We will consider rural rates for voice service to be “reasonably comparable” to urban voice rates under section 254(b)(3) if rural rates fall within a reasonable range of urban rates for reasonably comparable voice service. Consistent with our existing precedent, we will presume that a voice rate is within a reasonable range if it falls within two standard deviations above the national average.<sup>123</sup>

85. Because the data used to calculate the national average price for voice service is out of date, we direct the Wireline Competition Bureau and the Wireless Telecommunications Bureau to develop and conduct an annual survey of voice rates in order to compare urban voice rates to the rural voice rates that ETCs will be reporting to us.<sup>124</sup> The results of this survey will be published annually. For purposes of conducting the survey, the Bureaus should develop a methodology to survey a representative sample of facilities-based fixed voice service providers taking into account the relative categories of fixed voice providers as determined in the most recent FCC Form 477 data collection. In the FNPRM, we seek comment on whether to collect separate data on fixed and mobile voice rates and whether fixed and mobile voice services should have different benchmarks for purposes of determining reasonable comparability.<sup>125</sup>

## **B. Broadband Service**

86. As a condition of receiving federal high-cost universal service support, all ETCs, whether designated by a state commission or the Commission,<sup>126</sup> will be required to offer broadband service in their supported area that meets certain basic performance requirements and to report regularly on associated performance measures.<sup>127</sup> ETCs must make this broadband service available at rates that are reasonably comparable to offerings of comparable broadband services in urban areas.

87. In developing these performance requirements, we seek to ensure that the performance of broadband available in rural and high cost areas is “reasonably comparable” to that available in urban

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<sup>123</sup> The standard deviation is a measure of dispersion. The sample standard deviation is the square root of the sample variance. The sample variance is calculated as the sum of the squared deviations of the individual observations in the sample of data from the sample average divided by the total number of observations in the sample minus one. In a normal distribution, about 68 percent of the observations lie within one standard deviation above and below the average and about 95 percent of the observations lie within two standard deviations above and below the average.

<sup>124</sup> See *infra* Sections VII.D.5, VIII.A.2.

<sup>125</sup> See *infra* para. 1018.

<sup>126</sup> As used throughout this order, the term “high-cost support” refers to all existing high-cost USF mechanisms as well as the Connect America Fund, including the Mobility Fund Phase I, unless otherwise expressly noted.

<sup>127</sup> Although we do not at this time require it, we expect that ETCs that offer standalone broadband service in any portion of their service territory will also offer such service in all areas that receive CAF support. By “standalone service,” we mean that consumers are not required to purchase any other service (*e.g.*, voice or video service) in order to purchase broadband service.

areas.<sup>128</sup> All Americans should have access to broadband that is capable of enabling the kinds of key applications that drive our efforts to achieve universal broadband, including education (e.g., distance/online learning),<sup>129</sup> health care (e.g., remote health monitoring),<sup>130</sup> and person-to-person communications (e.g., VoIP or online video chat with loved ones serving overseas).<sup>131</sup>

88. To help ensure reasonable comparability of the capabilities offered to end users, we provide guidance in this section on benchmarks for evaluating whether particular broadband offerings adequately afford these capabilities, in order to provide clear performance targets and ensure accountability. Specifically, we discuss the technical characteristics of broadband offerings – speed, latency, and capacity – that influence the capabilities afforded to users, and therefore their ability to use broadband connections for the key purposes articulated above. We also discuss characteristics common to the broadband buildout obligations imposed on all recipients of the CAF.

89. In subsequent sections of the Order we provide more detailed guidance on the requirements for technical characteristics and broadband buildout associated with specific funding mechanisms under which particular ETCs will receive support, *i.e.*, rate-of-return support mechanisms, the CAF mechanisms in price cap territories, CAF ICC support, and Mobility Fund Phase I.<sup>132</sup> In the FNPRM, we seek comment on how the requirements we adopt here should be adjusted for the Remote Areas Fund and Mobility Fund Phase II.

### 1. Broadband Performance Metrics

90. Broadband services in the market today vary along several important dimensions. As discussed more fully below, we focus on speed, latency, and capacity as three core characteristics that affect what consumers can do with their broadband service, and we therefore include requirements related to these three characteristics in defining ETCs' broadband service obligations.<sup>133</sup>

91. For each of these characteristics, we require that funding recipients offer service that is reasonably comparable to comparable services offered in urban areas.<sup>134</sup> That is, the actual download and

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<sup>128</sup> 47 U.S.C. § 254(b)(3) (“Consumers in all regions of the Nation . . . should have access to . . . advanced telecommunications and information services[] that are reasonably comparable to those services provided in urban areas . . .”).

<sup>129</sup> See National Broadband Plan at 223-244.

<sup>130</sup> See, e.g., Omnibus Broadband Initiative, *Health Care Broadband in America, Early Analysis and a Path Forward*, at 5 (Aug. 2010); Center for Technology and Aging, *Technologies for Remote Patient Monitoring for Older Adults*, Position Paper, at 13 (April 2010), available at <http://www.techandaging.org/RPMPositionPaper.pdf> (discussing data transmission methods used for various continuous cardiac remote patient monitoring technologies).

<sup>131</sup> See National Broadband Plan at 59.

<sup>132</sup> See *infra* sections VII.C (Providing Support in Areas Served by Price Cap Carriers), VII.D (Universal Support for Rate-of-Return Carriers), and VII.E (Rationalizing Support for Mobility).

<sup>133</sup> See *Measuring Broadband America Report* at 12; see also TIA USF/ICC Transformation NPRM Comments at 9 (define broadband service by functionality rather than merely speed).

<sup>134</sup> As discussed in the Goals section above, see *supra* section IV (Goals), universal advanced mobile coverage is an important goal in its own right. By limiting reasonable comparability to “comparable services,” we are intending to ensure that fixed broadband services in rural areas are compared with fixed broadband services in urban areas, and similarly that mobile broadband services in rural areas are compared with mobile broadband services in urban areas. Because fixed and mobile broadband technologies may differ in some of their capabilities, we find it appropriate to adopt different performance benchmarks for the CAF funding mechanisms that are specifically oriented towards the goal of universal mobility, namely, Mobility Fund Phase I and Tribal Mobility Fund Phase I. In the FNPRM, we seek comment on how to compare mobile broadband to fixed broadband as product offerings evolve over time. See *infra* paras. 1021-1024.

upload speeds, latency, and usage limits (if any) for providers' broadband must be reasonably comparable to the typical speeds, latency, and usage limits (if any) of comparable broadband services in urban areas. Funding recipients may use any wireline, wireless, terrestrial, or satellite technology, or combination of technologies, to deliver service that satisfies this requirement.<sup>135</sup>

92. *Speed.* Users and providers commonly refer to the bandwidth of a broadband connection as its "speed." The bandwidth (speed) of a connection indicates the rate at which information can be transmitted by that connection, typically measured in bits, kilobits (kbps), or megabits per second (Mbps). The speed of consumers' broadband connections affects their ability to access and utilize Internet applications and content. To ensure that consumers are getting the full benefit of broadband, we require funding recipients to provide broadband that meets performance metrics for actual speeds,<sup>136</sup> measured as described below, rather than "advertised" or "up to" metrics.

93. In the past two Broadband Progress Reports,<sup>137</sup> the Commission found that the availability of residential broadband connections that actually enable an end user to download content from the Internet at 4 Mbps and to upload such content at 1 Mbps over the broadband provider's network was a reasonable benchmark for the availability of "advanced telecommunications capability," defined by the statute as "high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology."<sup>138</sup> This conclusion was based on the Commission's examination of overall Internet traffic patterns, which revealed that consumers increasingly are using their broadband connections to view high-quality video, and want to be able to do so while still using basic functions such as email and web browsing.<sup>139</sup> The evidence shows that streaming standard definition video in near real-time consumes anywhere from 1-5 Mbps, depending on a variety of factors.<sup>140</sup> This conclusion also was drawn from the National Broadband Plan, which, based on an analysis of user behavior, demands this usage places on the network, and recent experience in network evolution, recommended as a national broadband availability target that every household in America have access to affordable broadband service offering actual download speeds of at least 4 Mbps and actual upload speeds of at least 1 Mbps.

<sup>135</sup> See, e.g., T-Mobile *USF/ICC Transformation NPRM* Comments at 8 (define broadband in technology neutral way).

<sup>136</sup> See ADTRAN *USF/ICC Transformation NPRM* Comments at 31 (four characteristics required for measuring actual speed); Missouri Commission *USF/ICC Transformation NPRM* Comments at 7 (broadband provided should be at actual speeds not advertised speeds).

<sup>137</sup> See *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act; A National Broadband Plan for Our Future*, GN Docket Nos. 09-137, 09-51, Report, 25 FCC Rcd 9556, 9559, para. 5 (2010) (*2010 Sixth Broadband Progress Report*); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 10-159, Seventh Broadband Progress Report And Order On Reconsideration, 26 FCC Rcd 8008, 8018-19, paras. 14-15 (2011) (*2011 Seventh Broadband Progress Report*).

<sup>138</sup> 47 U.S.C. § 1302(d)(1). Voice, data, graphics, and video telecommunications are the fundamental building blocks for the key education, health care, and person-to-person communication applications discussed above.

<sup>139</sup> *2010 Sixth Broadband Progress Report*, 25 FCC Rcd at 9563-64, para. 11. We continue to expect that it is not uncommon for more than one person to make use of a single Internet connection simultaneously, particularly in multi-member households that subscribe to a single Internet access service.

<sup>140</sup> See Omnibus Broadband Initiative, *Broadband Performance: OBI Technical Paper No. 4*, at 8 (OBI, Broadband Performance).

94. Given the foregoing, other than for the Phase I Mobility Fund,<sup>141</sup> we adopt an initial minimum broadband speed benchmark for CAF recipients of 4 Mbps downstream and 1 Mbps upstream.<sup>142</sup> Broadband connections that meet this speed threshold will provide subscribers in rural and high cost areas with the ability to use critical broadband applications in a manner reasonably comparable to broadband subscribers in urban areas.<sup>143</sup>

95. Some commenters, including DSL and mobile wireless broadband providers, observe that the 1 Mbps upload speed requirement in particular could impose costs well in excess of the benefits of 1 Mbps versus 768 kilobits per second (kbps) upstream.<sup>144</sup> In general, we expect new installations to provide speeds of at least 1 Mbps upstream. However, to the extent a CAF recipient can demonstrate that support is insufficient to enable 1 Mbps upstream for all locations, temporary waivers of the upstream requirement for some locations will be available. We delegate authority to the Wireline Competition Bureau and Wireless Telecommunications Bureau to address such waiver requests. We note, however, that we expect that those facilities that are not currently capable of providing the minimum upstream speed will eventually be upgraded, consistent with our build-out requirements adopted below, with scalable technology capable of meeting future speed increases.

96. *Latency.* Latency is a measure of the time it takes for a packet of data to travel from one point to another in a network. Because many communication protocols depend on an acknowledgement that packets were received successfully, or otherwise involve transmission of data packets back and forth along a path in the network, latency is often measured by round-trip time in milliseconds. Latency affects a consumer's ability to use real-time applications, including interactive voice or video communication, over the network. We require ETCs to offer sufficiently low latency to enable use of real-time applications, such as VoIP.<sup>145</sup> The Commission's broadband measurement test results showed that most terrestrial wireline technologies could reliably provide latency of less than 100 milliseconds.<sup>146</sup>

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<sup>141</sup> See *supra* note 134.

<sup>142</sup> Many commenters supported a 4 Mbps download speed. See, e.g., CWA *USF/ICC Transformation NPRM* Comments at 14, 16-17; Cox *USF/ICC Transformation NPRM* Comments at 4-5; Frontier *USF/ICC Transformation NPRM* Comments at 23; Greenlining *USF/ICC Transformation NPRM* Comments at 5-6; Cellular One *USF/ICC Transformation NPRM* Comments at 26-27; U.S. Cellular *USF/ICC Transformation NPRM* Reply at 86-90 (summarizing support of TDS, RBA, CTIA, ACA, Sprint, T-Mobile, and USA Coalition for a 4 Mbps/1 Mbps speed threshold).

<sup>143</sup> Requiring 4 Mbps/1 Mbps to be provided to all locations, including the more distant locations on a landline network and regardless of the served location's position in a wireless network, implies that customers located closer to the wireline switch or wireless tower will be capable of receiving service in excess of this minimum standard. See, e.g., Letter from Jonathan Banks, USTelecom, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 et al., at 2 (filed Oct. 17, 2011) (discussing how shorter loop lengths could lead to some locations receiving broadband service at 6 Mbps downstream speed and others receiving 12 Mbps downstream speed).

<sup>144</sup> See, e.g., ADTRAN *USF/ICC Transformation NPRM* Comments at 28-29; AT&T *USF/ICC Transformation NPRM* Comments at 94 (stating that 4 Mbps/1 Mbps would require 50 percent more support than 4 Mbps/768 kbps); Florida Commission *USF/ICC Transformation NPRM* Comments at 5-6 (supporting 3 Mbps/768 kbps); T-Mobile *USF/ICC Transformation NPRM* Reply at 22 (stating that 768 kbps is less costly than 1 Mbps).

<sup>145</sup> See, e.g., ADTRAN *USF/ICC Transformation NPRM* Comments at 18 (describing latency's effect on voice communications); ITU-T, "International telephone connections and circuits – General Recommendations on the transmission quality for an entire international telephone connection," Recommendation G.114, May 2003.

<sup>146</sup> *Measuring Broadband America Report* at 22, Chart 9 (illustrating latencies of wireline technologies tested). Fiber-to-the-home had a latency averaging 17 milliseconds, and DSL ranged as high as approximately 75 milliseconds. We note that satellite companies contend that their services are adequate for some real-time applications like VoIP, even with round-trip latencies of more than 100 milliseconds. Satellite Providers *USF/ICC* (continued...)

97. *Capacity.* Capacity is the total volume of data sent and/or received by the end user over a period of time. It is often measured in gigabytes (GB) per month. Several broadband providers have imposed monthly data usage limits, restricting users to a predetermined quantity of data, and these limits typically vary between fixed and mobile services.<sup>147</sup> The terms of service may include an overage fee if a consumer exceeds the monthly limit. Some commenters recommended we specify a minimum usage limit.<sup>148</sup>

98. Although at this time we decline to adopt specific minimum capacity requirements for CAF recipients, we emphasize that any usage limits imposed by an ETC on its USF-supported broadband offering must be reasonably comparable to usage limits for comparable broadband offerings in urban areas.<sup>149</sup> In particular, ETCs whose support is predicated on offering of a fixed broadband service – namely, all ETCs other than recipients of the Phase I Mobility Funds – must allow usage at levels comparable to residential terrestrial fixed broadband service in urban areas.<sup>150</sup> We define terrestrial fixed broadband service as one that serves end users primarily at fixed endpoints using stationary equipment, such as the modem that connects an end user’s home router, computer or other Internet access device to the network. This term includes fixed wireless broadband services (including those offered over unlicensed spectrum).

99. In 2009, residential broadband users who subscribed to fixed broadband service with speeds between 3 Mbps and 5 Mbps used, on average, 10 GB of capacity per month,<sup>151</sup> and annual per-user growth was between 30 and 35 percent.<sup>152</sup> We note that AT&T’s DSL usage limit is 150 GB and its U-Verse offering has a 250 GB limit.<sup>153</sup> Since 2008, Comcast has had a 250 GB monthly data usage threshold on residential accounts.<sup>154</sup> Without endorsing or approving of these or other usage limits, we  
(Continued from previous page) \_\_\_\_\_

*Transformation NPRM Joint Reply at 8. But see Letter from John Kuykendall, on behalf of BEK Communications, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 et al., Attach. at 15 (filed Oct. 6, 2011) (criticizing satellite latency that cannot be improved by increased data speeds).*

<sup>147</sup> For example, as of May 2011, AT&T’s DSL offering had a 150 GB limit, and its U-verse offering had a 250 GB limit. See “To Cap, or Not,” N.Y. Times, July 21, 2011. Since 2008, Comcast has had a 250 GB monthly data usage threshold on residential accounts. See Comcast Announcement Regarding An Amendment to Our Acceptable Use Policy, <http://xfinity.comcast.net/terms/network/amendment/>. In contrast, Verizon Wireless offers data plans with usage limits of 2GB, 5GB, and 10GB. See, e.g., Verizon Wireless, Nationwide Single-Line Plans, <http://www.verizonwireless.com/b2c/plans/?page=single>.

<sup>148</sup> ADTRAN *USF/ICC Transformation NPRM Comments* at 19 (limitations on usage should be appropriate for the service being funded, whether fixed or mobile, given the disparity in traffic volumes for each service); Public Knowledge and Benton *USF/ICC Transformation NPRM Comments* at 13 (arguing capacity should match average in urban areas).

<sup>149</sup> We note that such service could include, for instance, use of a wireless data card if it can provide the performance characteristics described in this section.

<sup>150</sup> See *supra* para. 87 (“In developing these performance requirements, we seek to ensure that the performance of broadband available in rural and high cost areas is “reasonably comparable” to that available in urban areas”).

<sup>151</sup> Omnibus Broadband Initiative, *The Broadband Availability Gap: OBI Technical Paper No. 1*, at 112, Ex. 4-BQ (April 2010) (OBI, Broadband Availability Gap), available at <http://www.broadband.gov/plan/broadband-working-reports-technical-papers.html>.

<sup>152</sup> OBI, Broadband Performance at 7.

<sup>153</sup> See “To Cap, or Not,” N.Y. Times, July 21, 2011.

<sup>154</sup> Comcast Announcement Regarding An Amendment to Our Acceptable Use Policy, <http://xfinity.comcast.net/terms/network/amendment/>.

provide guidance by noting that a usage limit significantly below these current offerings (e.g., a 10 GB monthly data limit) would not be reasonably comparable to residential terrestrial fixed broadband in urban areas.<sup>155</sup> A 250 GB monthly data limit for CAF-funded fixed broadband offerings would likely be adequate at this time because 250 GB appears to be reasonably comparable to major current urban broadband offerings. We recognize, however, that both pricing and usage limitations change over time. We delegate authority to the Wireline Competition Bureau and Wireless Telecommunications Bureau to monitor urban broadband offerings, including by conducting an annual survey, in order to specify an appropriate minimum for usage allowances, and to adjust such a minimum over time.<sup>156</sup>

100. Similarly, for Mobility Fund Phase I, we decline to adopt a specific minimum capacity requirement that supported providers must offer mobile broadband users.<sup>157</sup> However, we emphasize that any usage limits imposed by a provider on its mobile broadband offerings supported by the Mobility Fund must be reasonably comparable to any usage limits for mobile comparable broadband offerings in urban areas.

101. *Areas with No Terrestrial Backhaul.* Recognizing that satellite backhaul may limit the performance of broadband networks as compared to terrestrial backhaul, we relax the broadband public interest obligation for carriers providing fixed broadband that are compelled to use satellite backhaul facilities.<sup>158</sup> The Regulatory Commission of Alaska reports that “for many areas of Alaska, satellite links may be the only viable option to deploy broadband.”<sup>159</sup> Carriers seeking relaxed public interest obligations because they lack the ability to obtain terrestrial backhaul—either fiber, microwave, or other technology—and are therefore compelled to rely exclusively on satellite backhaul in their study area, must certify annually that no terrestrial backhaul options exist, and that they are unable to satisfy the broadband public interest obligations adopted above due to the limited functionality of the available satellite backhaul facilities.<sup>160</sup> Any such funding recipients must offer broadband service speeds of at least 1 Mbps downstream and 256 kbps upstream within the supported area served by satellite middle-mile facilities.<sup>161</sup> Latency and capacity requirements discussed above will not apply to this subset of providers. Buildout obligations – which are dependent on the mechanism by which a carrier receives

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<sup>155</sup> We note that this should not be interpreted to mean that the Commission intends to regulate usage limits.

<sup>156</sup> We expect that the Bureaus will conduct this survey in conjunction with the pricing survey we direct the Bureaus to conduct below. *See supra* para. 114 (delegating to the Bureaus the authority to conduct an annual survey of urban broadband rates).

<sup>157</sup> *See supra* para. 87 (“In developing these performance requirements, we seek to ensure that the performance of broadband available in rural and high cost areas is “reasonably comparable” to that available in urban areas”).

<sup>158</sup> ACS *USF/ICC Transformation NPRM* Comments at 11 (“Even if the modest speeds of 4 Mbps down/1 Mbps up are adopted by the FCC as target throughput speeds, substantial construction of terrestrial facilities and expansion of satellite capacity will be needed to create the backhaul capability that will be necessary to deliver broadband at those speeds in Alaska.” (footnote omitted)); ACS *USF/ICC Transformation NPRM* Reply at 8 (same); Alaska Commission *USF/ICC Transformation NPRM* Comments at 24; GCI *USF/ICC Transformation NPRM* Comments at 2. As discussed elsewhere, we decline to relax the technical performance requirements due to satellite backhaul limitations for purposes of Mobility Fund Phase I, although we clarify that funds may be used to upgrade middle mile facilities. We seek additional comment on how to address satellite backhaul issues for Mobility Fund Phase II in the FNPRM. *See infra* section XVII.I (Mobility Fund Phase II).

<sup>159</sup> Alaska Commission *USF/ICC Transformation NPRM* Comments at 22; GCI *August 3 PN* Comments at 10 (estimating that “[t]wenty-seven percent of the state’s population lives in villages that are not on Alaska’s road/rail/pipeline network, and thus are today reached only by satellite middle-mile.”).

<sup>160</sup> *See supra* paras. 92-96 (adopting speed and latency requirements).

<sup>161</sup> GCI *August 3 PN* Comments at 27.

funding—remain the same for this class of carriers. We will monitor and review the public interest obligations for satellite backhaul areas. To the extent that new terrestrial backhaul facilities are constructed, or existing facilities improve sufficiently to meet the public interest obligations, we require funding recipients to satisfy the relevant broadband public interest obligations in full within twelve months of the new backhaul facilities becoming commercially available.<sup>162</sup>

102. *Community Anchor Institutions.*<sup>163</sup> We expect that ETCs will likely offer broadband at greater speeds to community anchor institutions in rural and high cost areas, although we do not set requirements at this time, as the 4 Mbps/1 Mbps standard will be met in the more rural areas of an ETC's service territory, and community anchor institutions are typically located in or near small towns and more inhabited areas of rural America.<sup>164</sup> We also expect ETCs to engage with community anchor institutions in the network planning stages with respect to the deployment of CAF-supported networks.<sup>165</sup> We require ETCs to identify and report on the community anchor institutions that newly gain access to fixed broadband service as a result of CAF support.<sup>166</sup> In addition, the Wireline Competition Bureau will invite further input on the unique needs of community anchor institutions as it develops a forward-looking cost model to estimate the cost of serving locations, including community anchor locations, in price cap territories.<sup>167</sup>

103. *Broadband Buildout Obligations.* All CAF funding comes with obligations to build out broadband within an ETC's service area, subject to certain limitations. The timing and extent of these obligations varies across the different CAF mechanisms, and details are discussed in the specific sections explaining the separate mechanisms. However, all broadband buildout obligations for fixed broadband are conditioned on not spending the funds to serve customers in areas already served by an "unsubsidized competitor."<sup>168</sup> We define an unsubsidized competitor as a facilities-based provider of residential terrestrial fixed voice and broadband service.<sup>169</sup>

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<sup>162</sup> This limited exemption is only available to providers that have no access in their study area to any terrestrial backhaul facilities, and does not apply to any providers that object to the cost of backhaul facilities. Similarly, providers relying on terrestrial backhaul facilities today will not be allowed this exemption if they elect to transition to satellite backhaul facilities.

<sup>163</sup> For purposes of this order, we define "community anchor institutions" to mean schools, libraries, medical and healthcare providers, public safety entities, community colleges and other institutions of higher education, and other community support organizations and agencies that provide outreach, access, equipment, and support services to facilitate greater use of broadband service by vulnerable populations, including low-income, the unemployed, and the aged. We draw upon the definition used in implementing American Recovery and Reinvestment Act of 2009. See 75 Fed. Reg. 3792, 3797 (Jan. 22, 2010).

<sup>164</sup> There is nothing in this order that requires a carrier to provide broadband service to a community anchor institution at a certain rate, but we acknowledge that community anchor institutions generally require more bandwidth than a residential customer, and expect that ETCs would provide higher bandwidth offerings to community anchor institutions in high-cost areas at rates that are reasonably comparable to comparable offerings to community anchor institutions in urban areas.

<sup>165</sup> See *infra* sections VII.C.2.b (Price Cap Public Interest Obligations) and VII.D.2 (Public Interest Obligations of Rate-of-Return Carriers).

<sup>166</sup> See *infra* para. 587.

<sup>167</sup> See Alliance for Community Media Reply at 2; CWA Comments at 17; Internet2 Comments at 2; SHLB Coalition Comments at 4; Letter from John Windhausen, Jr., SHLB Coalition, to Chairman Genachowski and Commissioners (dated Sept. 28, 2011).

<sup>168</sup> We recognize that the best data available at this time to determine whether broadband is available from an unsubsidized competitor at speeds at or above the 4 Mbps/1 Mbps speed threshold will likely be data on broadband (continued...)

104. We limit this definition to fixed, terrestrial providers because we think these limitations will disqualify few, if any, broadband providers that meet CAF speed, capacity, or latency minimums for all locations within relevant areas of comparison, while significantly easing administration of the definition. For example, the record suggests that satellite providers are generally unable to provide affordable voice and broadband service that meets our minimum capacity requirements without the aid of a subsidy: Consumer satellite services have limited capacity allowances today, and future satellite services appear unlikely to offer capacity reasonably comparable to urban offerings in the absence of universal service support.<sup>170</sup> Likewise, while 4G mobile broadband services may meet our speed requirements in many locations, meeting minimum speed and capacity guarantees is likely to prove challenging over larger areas, particularly indoors.<sup>171</sup> And because the performance offered by mobile services varies by location, it would be very difficult and costly for a CAF recipient or the Commission to evaluate whether such a service met our performance requirements at all homes and businesses within a study area, census block, or other required area. A wireless provider that currently offers mobile service can become an “unsubsidized competitor,” however, by offering a fixed wireless service that guarantees speed, capacity, and latency minimums will be met at all locations with the relevant area. Taken together, these considerations persuade us that the advantages of limiting our definition of unsubsidized providers outweigh any potential concerns that we may unduly disqualify service providers that otherwise meet our performance requirements. As mobile and satellite services develop over time, we will revisit the definition of “unsubsidized competitor” as warranted. Recognizing the benefits of certainty, however, we do not anticipate changing the definition for the next few years.

105. *Summary and Evolution of Technical Characteristics.* As set forth in further detail in section VII, this Order establishes several funding mechanisms within the CAF, each customized to particular user needs (e.g., fixed vs. mobile voice and broadband) and time horizons (phases I vs. II). The technical characteristics and broadband buildout obligation under each of these new CAF components can be summarized as follows:

(Continued from previous page) \_\_\_\_\_

availability at 3 Mbps downstream and 768 kbps upstream, which is collected for the National Broadband Map and through the Commission’s Form 477. Such data may therefore be used as a proxy for the availability of 4 Mbps/1 Mbps broadband. Depending on our anticipated reform to the Form 477 data collection, we may have additional data in the future upon which the Commission may rely. See *Modernizing the FCC Form 477 Data Program*, WC Docket No. 11-10, *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership*, WC Docket No. 07-38, *Service Quality, Customer Satisfaction, Infrastructure and Operating Data Gathering*, WC Docket No. 08-190, *Review of Wireline Competition Bureau Data Practices*, WC Docket No. 10-132, Notice of Proposed Rulemaking, 26 FCC Rcd 1508 (2011) (*Broadband Data NPRM*) (seeking comment on reforms to FCC Form 477 data collection).

<sup>169</sup> We define a fixed voice and broadband service as one that serves end users primarily at fixed endpoints using stationary equipment, such as the modem that connects an end user’s home router, computer, or other Internet access device to the network. This term encompasses fixed wireless broadband services (including services using unlicensed spectrum). The term does not include a broadband service that serves end users primarily using mobile stations. See 47 U.S.C. § 153(34) (“The term ‘mobile station’ means a radio-communication station capable of being moved and which ordinarily does move.”).

<sup>170</sup> OBI, Broadband Performance at 89; Letter from Lisa Scalpone, ViaSat, Inc., Jeffrey H. Blum, Dish Network L.L.C., and Dean Manson, Echostar Technologies L.L.C., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 et al., at 8 (filed Oct. 18, 2011).

<sup>171</sup> OBI, Broadband Performance at 66.

Component of CAF	Broadband Performance Characteristics	Obligation
<b>Price Cap CAF (Phase I)</b> <b>(Incremental support)</b>	<ul style="list-style-type: none"> <li>• Speed of at least 4 Mbps/1 Mbps to a specified number of locations, depending on level of incremental support</li> <li>• Latency sufficient for real-time applications, including VoIP</li> <li>• Usage at levels comparable to terrestrial residential fixed broadband service in urban areas</li> </ul>	Extend broadband to areas lacking 768 kbps according to National Broadband Map and carrier’s best knowledge; can’t use for areas already in capital improvements plan or to fulfill merger commitments or Recovery Act projects.
<b>CAF in Price Cap Areas (Phase II)</b>	<ul style="list-style-type: none"> <li>• Speed of at least 4 Mbps/1 Mbps to all supported locations, with at least 6 Mbps/1.5 Mbps to a number of supported locations to be specified by model</li> <li>• Latency sufficient for real-time applications, including VoIP</li> <li>• Usage at levels comparable to terrestrial residential fixed broadband service in urban areas</li> </ul>	Extend broadband to supported locations; supported locations do not include areas where there is an unsubsidized competitor offering 4 Mbps/1 Mbps.
<b>Areas with no terrestrial backhaul</b>	<ul style="list-style-type: none"> <li>• Speed of at least 1 Mbps/256 kbps in locations where otherwise would be obligated to provide 4 Mbps/1 Mbps</li> </ul>	
<b>Mobility Fund, Phase I</b>	<ul style="list-style-type: none"> <li>• 3G (200 kbps/50 kbps minimum at cell edge) OR 4G (768 kbps/200 kbps minimum at cell edge)</li> <li>• Latency sufficient for real-time applications</li> <li>• Usage at levels comparable to mobile 3G/4G offerings in urban areas</li> </ul>	Provide coverage of between 75 and 100 percent of road miles in unserved census blocks.  OR  For Tribal Mobility Fund: Provide coverage of between 75 and 100 percent of pops in unserved census blocks within Tribal lands.

Figure 1

106. Because most of these funding mechanisms are aimed at immediately narrowing broadband deployment gaps, both fixed and mobile, their performance benchmarks reflect technical

capabilities and user needs that are expected at this time to be suitable for today and the next few years.<sup>172</sup> However, we must also lay the groundwork for longer-term evolution of CAF broadband obligations, as we expect technical capabilities and user needs will continue to evolve. We therefore commit to monitoring trends in the performance of urban broadband offerings through the survey data we will collect and rural broadband offerings through the reporting data we will collect,<sup>173</sup> and to initiating a proceeding no later than the end of 2014 to review our performance requirements and ensure that CAF continues to support broadband service that is reasonably comparable to broadband service in urban areas.<sup>174</sup>

107. In advance of that future proceeding, we rely on our predictive judgment to provide guidance to CAF recipients on metrics that will satisfy our expectation that they invest the public's funds in robust, scalable broadband networks. As shown in the chart below, the National Broadband Plan estimated that by 2017, average advertised speeds for residential broadband would be approximately 5.76 Mbps downstream.<sup>175</sup> Applying growth rates measured by Akamai, one finds a projected average actual downstream speed by 2017 of 5.2 Mbps, and a projected average actual peak downstream speed of 6.86 Mbps.

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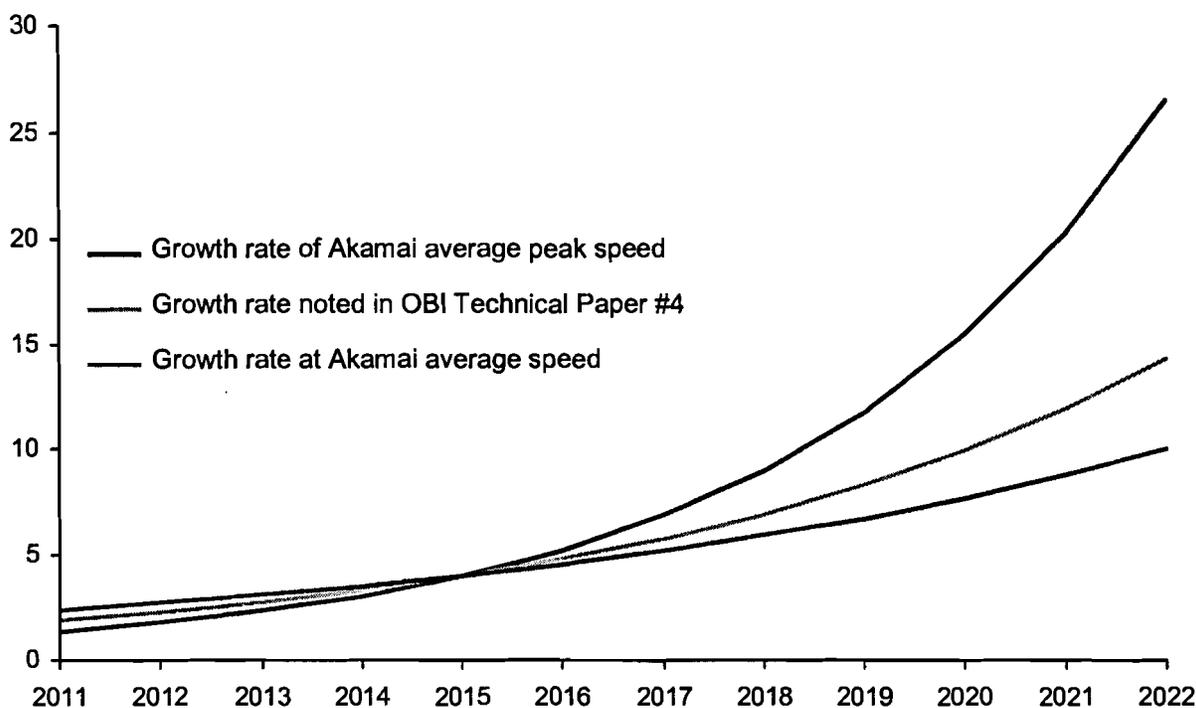
<sup>172</sup> Phased down competitive ETC support is not aimed at these objectives. Therefore, it is not subject to these broadband requirements. Obligations of competitive ETCs are addressed below. See *infra* section VII.E.5 (Transition of Competitive ETC Support to CAF).

<sup>173</sup> See *supra* para. 99 (delegating authority to the Bureaus conduct an annual survey to monitor urban broadband offerings) and *infra* section VIII.A.2 (Reporting Requirements).

<sup>174</sup> 47 U.S.C. § 254(b). Commenters recommended reviewing the public interest obligations periodically, with suggested periods ranging from every year to every five years. See, e.g., Frontier *USF/ICC Transformation NPRM* Comments at 24 (review every 5 years); Google *USF/ICC Transformation NPRM* Comments at 16 (review every 3 years); Greenlining *USF/ICC Transformation NPRM* Comments at 7 (review annually); Nebraska Commission *USF/ICC Transformation NPRM* Comments at 16 (review every 4 years). We select three years in light of the timing of the funding mechanisms we adopt in this Order.

<sup>175</sup> See OBI, Broadband Performance at 16 (historical 20 percent annual growth of advertised speeds); Cisco, Cable and Telco Service Provider Abstract Network Model, [http://www.cisco.com/web/siteassets/legal/terms\\_condition.html](http://www.cisco.com/web/siteassets/legal/terms_condition.html) (forecasting increase in file sharing and video); Akamai State of the Internet Q1 2011 Report, p. 12, fig. 7, [www.akamai.com/stateoftheinternet](http://www.akamai.com/stateoftheinternet) (showing growth across the last year in average speed of 14 percent in the U.S.).

## Forecast for typical downstream speed

Figure 2<sup>176</sup>

108. Based on these projections, we establish a benchmark of 6 Mbps downstream and 1.5 Mbps upstream for broadband deployments in later years of CAF Phase II.

## 2. Measuring and Reporting Broadband

109. We will require recipients of funding to test their broadband networks for compliance with speed and latency metrics and certify to and report the results to the Universal Service Administrative Company (USAC)<sup>177</sup> on an annual basis.<sup>178</sup> These results will be subject to audit. In

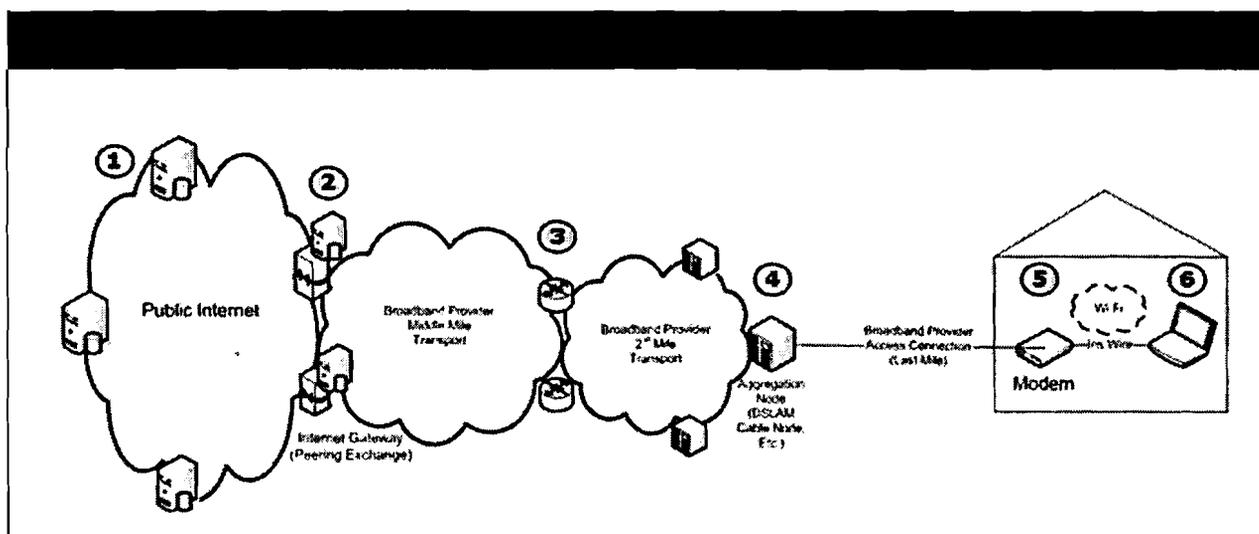
<sup>176</sup> Speed forecasts based on growth rates, assuming 4 Mbps speed in 2015.

<sup>177</sup> The Universal Service Administrative Company (USAC), a subsidiary of the National Exchange Carrier Association (NECA), is the private not-for-profit corporation created to serve as the Administrator of the Fund under the Commission's direction. See *Changes to the Board of Directors of the National Exchange Carrier Association*, Third Report and Order in CC Docket No. 97-21, Fourth Order on Reconsideration in CC Docket No. 97-21 and Eighth Order on Reconsideration in CC Docket No. 96-45, 13 FCC Rcd 25,058, 25,063-66, paras. 10-14 (1998); 47 C.F.R. § 54.701(a). The Commission appointed USAC the permanent Administrator of all of the federal universal service support mechanisms. See 47 C.F.R. §§ 54.702(b)-(m), 54.711, 54.715. USAC administers the Fund in accordance with the Commission's rules and orders. The Commission provides USAC with oral and written guidance, as well as regulation through its rulemaking process. USAC plays a critical role as day-to-day Administrator in collecting necessary information that enables the Commission to oversee the entire universal service fund. See, e.g., Memorandum of Understanding Between the Federal Communications Commission and the Universal Service Administrative Company (Sept. 9, 2008) (*2008 FCC-USAC MOU*), available at <http://www.fcc.gov/omd/usac-mou.pdf>. As set forth throughout this Order, we expect USAC to administer the new fund we create today, the Connect America Fund, including the Mobility Fund.

addition, as part of the federal-state partnership for universal service, we expect and encourage states to assist us in monitoring and compliance and therefore require funding recipients to send a copy of their annual broadband performance report to the relevant state or Tribal government.<sup>179</sup>

110. Commenters generally supported testing and reporting of broadband performance.<sup>180</sup> While some preferred only certifications without periodic testing,<sup>181</sup> we find that requiring ETCs to submit verifiable test results to USAC and the relevant state commissions will strengthen the ability of this Commission and the states to ensure that ETCs that receive universal service funding are providing at least the minimum broadband speeds, and thereby using support for its intended purpose as required by section 254(e).

111. We adopt the proposal in the *USF-ICC Transformation NPRM* that actual speed and latency be measured on each ETC's access network from the end-user interface to the nearest Internet access point. In Figures 3 and 4 below, we illustrate basic network structure for terrestrial broadband networks (wired and wireless, respectively). In these diagrams, the end-user interface end-point would be (5) the modem, the customer premise equipment typically managed by a broadband provider as the last connection point to the managed network, while the nearest Internet access point end-point would be (2) the Internet gateway, the closest peering point between the broadband provider and the public Internet for a given consumer connection. The results of Commission testing of wired networks suggest that "broadband performance that falls short of expectations is caused primarily by the segment of an ISP's network from [5] the consumer gateway to [2] the ISP's core network."<sup>182</sup>



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<sup>178</sup> See *infra* para. 585.

<sup>179</sup> See *infra* para. 582.

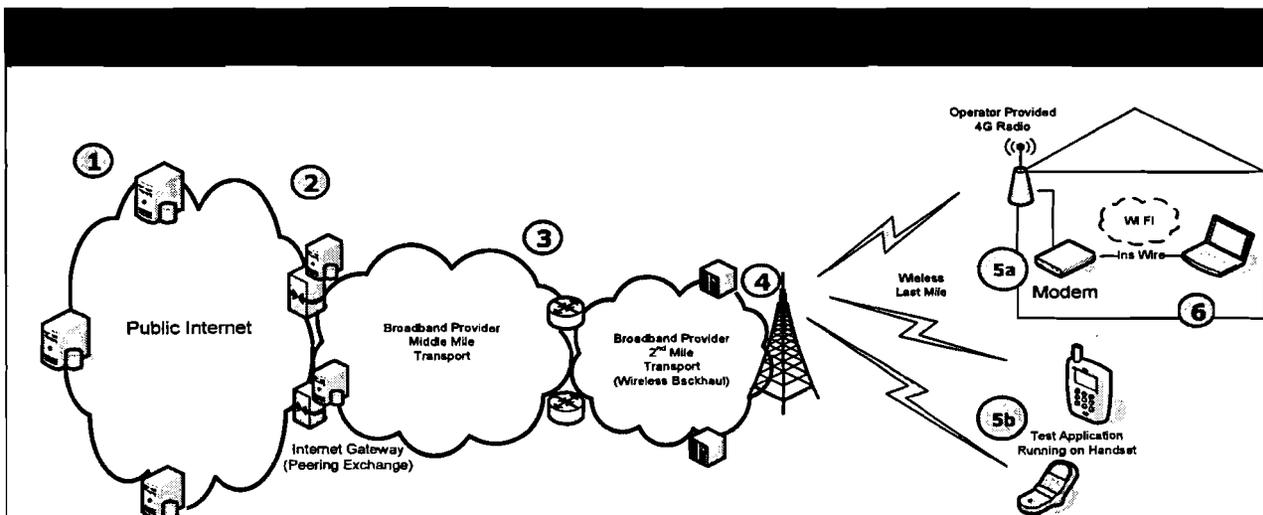
<sup>180</sup> ADTRAN *USF/ICC Transformation NPRM* Comments at 32; GVNW *USF/ICC Transformation NPRM* Reply at 26 (must be a process for verifying performance); ICORE *USF/ICC Transformation NPRM* Comments at 12-13 (quality of service obligations and extensive reporting requirements are safeguards that prevent waste and inefficiency).

<sup>181</sup> U.S. Cellular *USF/ICC Transformation NPRM* Comments at 46-47.

<sup>182</sup> *Measuring Broadband America Report* at 11; see ADTRAN *USF/ICC Transformation NPRM* Comments at 33-35 (supporting use of Points 2 and 5 as the end-points for measuring broadband performance).

- (1) **Public Internet content:** Public Internet content that is hosted by multiple service providers, content providers and other entities in a geographically diverse (worldwide) manner.
- (2) **Internet gateway:** Closest peering point between broadband provider and public Internet for a given consumer connection.
- (3) **Link between second mile and middle mile:** Broadband provider managed interconnection between middle mile and last mile
- (4) **Aggregation Node:** First aggregation point for broadband provider (e.g., Digital Subscriber Line Access Multiplexer (DSLAM), cable node, satellite, etc.)
- (5) **Modem:** Customer premise equipment (CPE) typically managed by a broadband provider as the last connection point to the managed network (e.g., DSL modem, cable modem, satellite modem, optical networking terminal (ONT), etc.)
- (6) **Consumer device:** Consumer device connected to modem through internal wire or Wi-Fi (home networking), including hardware and software used to access the Internet and process content (customer managed)

Figure 3



- (1) **Public Internet content:** Public Internet content that is hosted by multiple service providers, content providers and other entities in a geographically diverse (worldwide) manner.
- (2) **Internet gateway:** Closest peering point between broadband provider and public Internet for a given consumer connection.
- (3) **Link between second mile and middle mile:** Broadband provider managed interconnection between middle mile and last mile
- (4) **Aggregation Node:** First aggregation point for broadband provider (e.g., DSLAM, tower site, cable node, satellite, etc.)
- (5)(a) **Household fixed modem/receiver:** Customer premise equipment (CPE) typically managed by a broadband provider as the last connection point to the managed network (e.g., DSL modem, cable modem, satellite modem, optical networking terminal (ONT), wireless modem, etc.)
- 5(b) **Consumer Device:** Consumer mobile device (smartphone, laptop, etc.) wireless connected to provider network
- (6) **Consumer device:** Consumer device connected to modem through internal wire or Wi-Fi

(home networking), including hardware and software used to access the Internet and process content (customer managed)

Figure 4

112. In the FNPRM, we seek further comment on the specific methodology ETCs should use to measure the performance of their broadband services subject to these general guidelines, and the format in which funding recipients should report their results.<sup>183</sup> We direct the Wireline Competition Bureau, the Wireless Telecommunications Bureau, and the Office of Engineering and Technology to work together to refine the methodology for such testing, which we anticipate will be implemented in 2013.

### 3. Reasonably Comparable Rates for Broadband Service

113. Section 254(b) of the Act requires the Commission to base its universal service policies on certain principles, including that “[c]onsumers in all regions of the Nation . . . should have access to telecommunications and information services . . . that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.”<sup>184</sup> As with voice services, for broadband services we will consider rural rates to be “reasonably comparable” to urban rates under section 254(b)(3) if rural rates fall within a reasonable range of urban rates for reasonably comparable broadband service. However, we have never compared broadband rates for purposes of section 254(b)(3), and therefore we direct the Bureaus to develop a specific methodology for defining that reasonable range, taking into account that retail broadband service is not rate regulated and that retail offerings may be defined by price, speed, usage limits, if any, and other elements.<sup>185</sup> In the FNPRM, we seek comment on how specifically to define a reasonable range.<sup>186</sup>

114. We also delegate to the Wireline Competition Bureau and Wireless Telecommunications Bureau the authority to conduct an annual survey of urban broadband rates, if necessary, in order to derive a national range of rates for broadband service.<sup>187</sup> We do not currently have sufficient data to establish such a range for broadband pricing, and are unaware of any adequate third-party sources of data for the relevant levels of service to be compared. We therefore delegate authority to the Bureaus to determine the appropriate components of such a survey. By conducting our own survey, we believe we will be able to tailor the data specifically to our need to satisfy our statutory obligation. We require recipients of funding to provide information regarding their pricing for service offerings, as described

<sup>183</sup> See *infra* section XVII.A.1 (Measuring Broadband Service).

<sup>184</sup> 47 U.S.C. § 254(b)(3).

<sup>185</sup> Consistent with the fact that the Commission does not set regulated rates for broadband Internet access service, the comparison of rural and urban rates will be conducted pursuant to the principles set forth in section 254(b)(3) of the Act and is solely for the purposes of compliance with section 254’s mandates.

<sup>186</sup> See *infra* section XVII.A.2 (Reasonably Comparable Voice and Broadband Services).

<sup>187</sup> In the *Broadband Data NPRM*, the Commission proposed collecting pricing data through a revised FCC Form 477. *Broadband Data NPRM*, 26 FCC Rcd at 1533-36, paras. 66-76 (seeking comment on whether and how the Commission should collect price data). We will rely on any pricing data collected pursuant to a revised FCC Form 477 data collection to calculate a national average urban rate for broadband. However, the process of collecting and publishing industry-wide data through a revised FCC Form 477 may not be completed before the first annual certification, and therefore a survey may be necessary. See also *supra* para. 99 (delegating authority to the Wireline Competition Bureau and Wireless Telecommunications Bureau to conduct annual survey of urban broadband offerings).

more fully below.<sup>188</sup> We also encourage input from the states and other stakeholders as the Bureaus develop the survey.

## VII. ESTABLISHING THE CONNECT AMERICA FUND

### A. Overview

115. As described more fully below, we establish the Connect America Fund to bring broadband to unserved areas; support advanced mobile voice and broadband networks in rural, insular and high-cost areas; expand fixed broadband and facilitate reform of the intercarrier compensation system. In establishing the CAF, we also set for the first time a firm and comprehensive budget for the high-cost program.

116. For areas served by price cap companies, we institute immediate reforms (Phase I) to streamline and redirect legacy universal service payments to accelerate broadband deployment in unserved areas. We also adopt a longer-term approach (Phase II) that, starting as soon as the Wireline Competition Bureau completes work on a forward-looking broadband cost model, will direct funds for five years to those areas that are unserved through the operation of market forces, using a mechanism that combines use of this model and competitive bidding. We also adopt the necessary measures to transition carriers from existing support to CAF.

117. For areas served by rate-of-return carriers, we decline to immediately shift support to the model- and competitive bidding-based mechanism in CAF. Instead, we reform legacy support mechanisms for rate-of-return carriers to begin the transition towards a more incentive-based form of regulation with better incentives for efficient operations. In the accompanying FNPRM, we seek further comment on how best to ensure a predictable path forward for rate-of-return companies to extend broadband.

118. Within CAF, we also establish support for mobile voice and broadband services in recognition of the fact that promoting the universal availability of advanced mobile services is a vital component of the Commission's universal service mission. We establish the Mobility Fund as part of CAF to first provide one-time support (Phase I) to immediately accelerate deployment of networks for mobile broadband services in unserved areas, and then provide ongoing support (Phase II) to expand and sustain mobile voice and broadband service in communities in which service would be unavailable absent federal support. We also set forth the necessary transition for carriers receiving support today under the legacy rules.

119. Finally, to ensure that Americans living in the most costly areas in the nation can obtain affordable broadband through alternative technology platforms, including satellite and unlicensed wireless, the CAF also includes dedicated funding for extremely high cost areas, which will be disbursed through a market-based mechanism.

120. Through these coordinated mechanisms, the CAF will immediately begin making available broadband and advanced mobile services to unserved American homes, businesses, and community anchor institutions, while transitioning universal service to an efficient, technology-neutral system that uses tools, including competitive bidding, to ensure that scarce public resources support the best possible communications services for rural Americans. Given the disparate treatment of different carriers and technologies under legacy rules, it is not practicable to transition immediately all components of the program to competitive-bidding principles. But the approach we take today provides us the opportunity to see the application of these principles in practice and evaluate their effectiveness, creates a transition period for carriers to adapt to more incentive-based approaches, and allows time for new technologies, new competitors, and consumer demand to continue to evolve and mature.

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<sup>188</sup> See *infra* paras. 592-594.

## B. The Budget

121. *Background.* Many individual mechanisms within the high-cost program function under fixed budgets under the current system.<sup>189</sup> The high-cost program as a whole, however, has never had a budget. In the *USF-ICC Transformation NPRM*, the Commission noted its commitment to controlling the size of the universal service fund.<sup>190</sup> The Commission sought comment on setting an overall budget for the CAF such that the sum of the CAF and any existing legacy high-cost support mechanisms (however modified in the future) in a given year would remain equal to current funding levels. The Broadband Plan similarly recommended that the “FCC should aim to keep the overall size of the fund close to its current size (in 2010 dollars).”<sup>191</sup>

122. In response, a broad cross-section of interested stakeholders, including consumer groups, state regulators, current recipients of funding, and those that do not currently receive funding, agreed that the Commission should establish a budget for the overall high-cost program, with many urging the Commission to set that budget at \$4.5 billion per year, the estimated size of the program in fiscal year (FY) 2011.<sup>192</sup> Some argue that we should adopt a hard cap to ensure that budget is not exceeded.<sup>193</sup>

123. *Discussion.* For the first time, we now establish a defined budget for the high-cost component of the universal service fund.<sup>194</sup> We believe the establishment of such a budget will best ensure that we have in place “specific, predictable, and sufficient” funding mechanisms to achieve our universal service objectives.<sup>195</sup> We are today taking important steps to control costs and improve

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<sup>189</sup> See *High-Cost Universal Service Support*, WC Docket No. 05-337, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *Alltel Communications, Inc., et al. Petitions for Designation as Eligible Telecommunications Carriers, RCC Minnesota, Inc. and RCC Atlantic, Inc. New Hampshire ETC Designation Amendment*, Order, 23 FCC Rcd 8834, 8834, para. 1 (2008) (*Interim Cap Order*) (adopting an emergency cap on high-cost support for competitive ETCs); *Amendment of Part 36 of the Commission’s Rules and Establishment of a Joint Board*, CC Docket No. 80-286, Report and Order, 9 FCC Rcd 303 (1993) (detailing cap on HCLS); *Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Low-Volume Long Distance Users, Federal-State Joint Board on Universal Service*, Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 99-249, Eleventh Report and Order in CC Docket No. 96-45, 15 FCC Rcd 12962 (2000) (*CALLS Order*), *rev’d and remanded, Texas Office of Public Utility Counsel v. FCC*, 265 F. 3d 313 (5th Cir. 2001); and *Access Charge Reform*, CC Docket No. 96-262, *Price Cap Performance Review for LECs*, CC Docket No. 94-1, *Low-Volume Long Distance Users*, CC Docket No. 99-249, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Order on Remand, 18 FCC Rcd 14976 (2003). See also *High-Cost Universal Service Support, Federal State Joint Board on Universal Service*, WC Docket No. 05-337, CC Docket No. 96-45, Order, 23 FCC Rcd. 8834 (2008) (capping IAS for ILECs as of 2008).

<sup>190</sup> *USF/ICC Transformation NPRM*, 26 FCC Rcd at 4680-82, paras. 412-414.

<sup>191</sup> National Broadband Plan at 150.

<sup>192</sup> ABC Plan Proponents *August 3 PN* Joint Comments at 17; NASUCA *USF/ICC Transformation NPRM* Comments at 10; Rural Associations *August 3 PN* Comments at 5; State Members *USF/ICC Transformation NPRM* Comments at 11.

<sup>193</sup> Comcast *August 3 PN* Comments at 21; Free State *USF/ICC Transformation NPRM* Comments at 10-11; NCTA *August 3 PN* Comments at 6; XO *USF/ICC Transformation NPRM* Reply at 20-22.

<sup>194</sup> As noted above, for purposes of this budget, the term “high-cost” includes all support mechanisms in place as of the date of this order, specifically, high-cost loop support, safety net support, safety valve support, local switching support, interstate common line support, high cost model support, and interstate access support, as well as the new Connect America Fund, which includes funding to support and advance networks that provide voice and broadband services, both fixed and mobile, and funding provided in conjunction with the recovery mechanism adopted as part of intercarrier compensation reform. See *supra* note 16.

<sup>195</sup> 47 U.S.C. 254(b)(5).

accountability in USF, and our estimates of the funding necessary for components of the CAF and legacy high-cost mechanisms represent our predictive judgment as to how best to allocate limited resources at this time. We anticipate that we may revisit and adjust accordingly the appropriate size of each of these programs by the end of the six-year period we budget for today, based on market developments, efficiencies realized, and further evaluation of the effect of these programs in achieving our goals.

124. Importantly, establishing a CAF budget ensures that individual consumers will not pay more in contributions due to the reforms we adopt today. Indeed, were the CAF to significantly raise the end-user cost of services, it could undermine our broader policy objectives to promote broadband and mobile deployment and adoption. As we explained with respect to the budget for the Schools and Libraries program, we “must balance [our] desire to ensure that schools and libraries have access to valuable communications opportunities with the need to ensure that consumer rates for communications services remain affordable. End users ultimately bear the cost of supporting universal service, through carrier charges.”<sup>196</sup>

125. We therefore establish an annual funding target, set at the same level as our current estimate for the size of the high-cost program for FY 2011, of no more than \$4.5 billion. This budgetary target will remain in place until changed by a vote of the Commission. We believe that setting the budget at this year’s support levels will minimize disruption and provide the greatest certainty and predictability to all stakeholders. We do not find that amount to be excessive given the reforms we adopt today, which expand the high-cost program in important ways to promote broadband and mobility; facilitate intercarrier compensation reform; and preserve universal voice connectivity. At the same time, we do not believe a higher budget is warranted, given the substantial reforms we concurrently adopt to modernize our legacy funding mechanisms to address long-standing inefficiencies and wasteful spending. We conclude that it is appropriate, in the first instance, to evaluate the effect of these reforms before adjusting our budget.

126. The total \$4.5 billion budget will include CAF support resulting from intercarrier compensation reform, as well as new CAF funding for broadband and support for legacy programs during a transitional period.<sup>197</sup> As part of this budget, we will provide \$500 million per year in support through the Mobility Fund, of which up to \$100 million in funding will be reserved for Tribal lands. We will also provide at least \$100 million to subsidize service in the highest cost areas. The remaining amount – approximately \$4 billion – will be divided between areas served by price cap carriers and areas served by rate-of-return carriers, with no more than \$1.8 billion available annually for price cap territories after a transition period and up to \$2 billion available annually for rate-of-return territories, including, in both instances, intercarrier compensation recovery. We also institute a number of safeguards in this new

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<sup>196</sup> *Schools and Libraries Universal Service Support Mechanism*, CC Docket No. 02-6, Sixth Report and Order, 25 FCC Rcd 18762, 18781, par. 36 (2010).

<sup>197</sup> Throughout this document, “Tribal lands” include any federally recognized Indian tribe’s reservation, pueblo or colony, including former reservations in Oklahoma, Alaska Native regions established pursuant to the Alaska Native Claims Settlements Act (85 Stat. 688), and Indian Allotments, *see* 47 C.F.R. § 54.400(e), as well as Hawaiian Home Lands—areas held in trust for native Hawaiians by the state of Hawaii, pursuant to the Hawaiian Homes Commission Act, 1920, Act July 9, 1921, 42 Stat. 108, *et seq.*, as amended. We adopt a definition of “Tribal lands” that includes Hawaiian Home Lands, as the term was used in the Notice. *USF/ICC Transformation NPRM*, 26 FCC at 4558, para. 3 n.4. We note that Hawaiian Home Lands were not included within the Tribal definition in the 2007 order that adopted an interim cap on support for competitive eligible telecommunications carriers, with an exemption of Tribal lands from that cap. *See Interim Cap Order*, 23 FCC Rcd at 8848-49, paras. 31-33. We agree with the State of Hawaii that Hawaiian Home Lands should be included in the definition of Tribal lands in the context of the comprehensive reforms we adopt today for the universal service program. Letter from Bruce A. Olcott, Counsel to the State of Hawaii, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90 et al. (filed Oct. 15, 2011).

framework to ensure that carriers that warrant additional funding have the opportunity to petition for such relief. Although we expect that in some years CAF may distribute less than the total budget, and in other years slightly more, we adopt mechanisms later in this Order to keep the contribution burden at no more than \$4.5 billion per year, plus administrative expenses, notwithstanding variations on the distribution side.<sup>198</sup> Meanwhile, we will closely monitor the CAF mechanisms for longer-term consistency with the overall budget goal, while ensuring the budget remains at appropriate levels to satisfy our statutory mandates.

### C. Providing Support in Areas Served by Price Cap Carriers

127. More than 83 percent of the approximately 18 million Americans who lack access to fixed broadband live in price cap study areas.<sup>199</sup> As a first step to delivering robust, scalable broadband to these unserved areas, the first phase of the CAF will provide the opportunity for price cap carriers to begin extending broadband service to hundreds of thousands of unserved locations in their territories. In the second phase of the CAF, we will use a combination of a forward-looking broadband cost model and competitive bidding to efficiently support deployment of networks providing both voice and broadband service for a five-year period. Before 2018, we will determine how best to further expand the use of market-based mechanisms, such as competitive bidding, to fulfill our universal service mandate in the most efficient and fiscally responsible manner.

#### 1. Immediate Steps To Begin Rationalizing Support Levels For Price Cap Carriers

128. In this section, we begin the process of transitioning high cost support for price cap carriers to the CAF by establishing CAF Phase I. In CAF Phase I, we freeze support under our existing high-cost support mechanisms—HCLS, SNA, safety valve, HCMS, LSS, IAS, and ICLS—for price cap carriers and their rate-of-return affiliates.<sup>200</sup> We will now call this support “frozen high-cost support.” In addition, to spur the deployment of broadband in unserved areas, we allocate up to \$300 million in

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<sup>198</sup> See *infra* section VII.H (Enforcing the Budget for Universal Service). The \$4.5 billion budget includes only disbursements of support and does not include administrative expenses, which will continue to be collected consistent with past practices. Typically, administrative expenses attributed to the high-cost program (including other overhead expenses from USAC) range from 1 to 2 percent of total program expenses. See USAC Quarterly Administrative Filings, available at <http://www.usac.org/about/governance/fcc-filings/fcc-filings-archive.aspx> (for 1998-First Quarter 2012). Similarly, the \$4.5 billion budget does not include prior period adjustments associated with support attributable to years prior to 2012. For example, USAC will be performing true-ups associated with 2010 ICLS in 2012. See 47 C.F.R. 54.903(b)(3). To the extent that those true-ups result in increased support for 2010, those disbursements would not apply to the budget discussed here.

<sup>199</sup> See National Broadband Map, available at <http://www.broadbandmap.gov>. Based on data as of December 2010, there were an estimated 18.8 million Americans who lacked access to terrestrial fixed broadband services with a maximum advertised download speed of at least 3 Mbps and a maximum advertised upload speed of at least 768 kbps. *Id.* For these purposes, terrestrial fixed broadband technologies include xDSL, other copper, cable modem, fiber to the end user, fixed wireless, whether licensed or unlicensed, and electric power line. To obtain the numbers of unserved people in price cap regions, staff used data from TeleAtlas North America representing boundaries of wire centers. These wire centers contain study area codes, which staff associated with USAC codes classifying those areas as either price cap or rate of return. Staff linked this set of data to the data underlying the National Broadband Map, which can be used to report broadband availability by study area. See <http://www.broadbandmap.gov/nbm/summarize>. The resulting link shows that, of the 18.8 million people without service, 83 percent are in price cap areas and 17 percent are in rate of return areas, as defined by USAC.

<sup>200</sup> In doing so, we eliminate altogether the current HCMS and IAS mechanisms for price cap companies. For further discussion of changes to HCLS, SNA, LSS and ICLS, applicable to rate-of-return carriers, see *infra* Section VII.D.

additional support to such carriers, distributed through the mechanism described below,<sup>201</sup> we call this component of CAF Phase I support “incremental support.”

129. In establishing CAF Phase I, we set the stage for a full transition to a system where support in price cap territories is determined based on competitive bidding or the forward-looking costs of a modern multi-purpose network. The reforms we adopt today represent an important step away from distinctions based on whether a company is classified as a rural carrier or a non-rural carrier—distinctions that, for the purposes of calculating universal service support, are artifacts of our rules rather than required by the Act. Instead, we establish two pathways for how support is determined—one for companies whose interstate rates are regulated under price caps, and the other for those whose interstate rates are regulated under rate-of-return. We make conforming changes to our Part 54 rules as necessary to reflect that framework.<sup>202</sup> Consistent with our goal of providing support to price cap companies on a forward-looking cost basis, rather than based on embedded costs, we will, for the purposes of CAF Phase I, treat as price cap carriers the rate-of-return operating companies that are affiliated with holding companies for which the majority of access lines are regulated under price caps. That is, we will freeze their universal service support and consider them as price cap areas for the purposes of our new CAF Phase I distribution mechanism.<sup>203</sup>

130. *Background.* Historically, the Commission’s intrastate universal service programs have distinguished between companies classified as “rural” and “non-rural” carriers, with the former eligible for high-cost loop support (HCLS) and the latter eligible for high-cost model support (HCMS).<sup>204</sup> The term “rural telephone company,” however, as defined by the Act, does not simply mean a carrier that serves rural areas.<sup>205</sup> Rather, a rural telephone company, generally speaking, is a relatively small telephone company that *only* serves rural areas. Many “non-rural” carriers serve both urban and rural areas. In fact, price cap companies, which largely are classified as non-rural companies, today serve more than 83 percent of the people that lack broadband, many of whom live in areas that are just as low-density and remote as areas served by rural companies.<sup>206</sup> Today, some price cap carriers meet the Act’s

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<sup>201</sup> As detailed more fully above, we set the total CAF budget for areas served by price cap carriers at \$1.8 billion out of the total \$4.5 billion annual budget. *See supra* para. 126. The \$300 million in additional support we allocate to price cap carriers today begins the process of closing the rural-rural divide by directing additional funds to areas served by price cap carriers in a manner consistent with our overall budget goals and the more limited purpose of Phase I.

<sup>202</sup> We recognize that the statute also makes a distinction in how it directs the states and this Commission to evaluate requests for designation by additional carriers in areas served by rural companies. In particular, section 214(e)(6) specifies that the Commission “may, with respect to an area served by a rural telephone company, and shall, in the case of all other areas, designate more than one common carrier as an eligible telecommunications carrier for a service area designated under this paragraph . . . . Before designating an additional telecommunications carrier for an area served by a rural telephone company, the Commission shall find that the designation is in the public interest.” Nothing in this Order is intended to undermine those statutory directives.

<sup>203</sup> This action does not require mandatory price cap conversion for those operating companies, but rather establishes the principle that such companies in the future will receive support based on a forward looking cost model rather than their embedded costs.

<sup>204</sup> *See* 47 U.S.C. § 153(37) (definition of rural telephone company); 47 C.F.R. § 51.5 (adopting the Act’s definition of “rural telephone company” for universal service purposes).

<sup>205</sup> *See* 47 U.S.C. § 153(37).

<sup>206</sup> *See supra* note 199. The distinction in how universal service support is calculated for rural and non-rural carriers is a vestige of how the Commission initially implemented section 254 in the wake of the 1996 Act. At that time, the Commission concluded that it would use a forward-looking cost model to calculate the cost of providing universal service in high-cost areas, but it chose to implement such a mechanism initially only for companies classified as (continued...)

definition of a rural telephone company and are eligible for HCLS, while others do not and are eligible for HCMS. In addition, at least some price cap carriers currently receive support from each of the other high-cost support mechanisms: LSS, IAS, and ICLS.<sup>207</sup>

131. In response to the *USF/ICC Transformation NPRM*, several price cap carriers proposed, as a transitional measure, to provide support to price cap carriers based on a simplified forward-looking estimate of the costs of serving each wire center, without averaging such costs on a statewide basis as the current non-rural support mechanism does.<sup>208</sup> We sought further comment on this proposal in the *August 3 Public Notice*.<sup>209</sup> We also specifically requested comment on the amount of support that should be distributed under such a mechanism and the public interest obligations that should attach to recipients of such support.<sup>210</sup>

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“non-rural” under the 1996 Act, which were the Bell operating companies and other large incumbent telephone companies. It allowed the more than 1,000 small carriers operating in rural areas to continue to receive support temporarily based on their embedded costs under mechanisms that pre-dated the 1996 Act, with some modifications. Then, in 2001, the Commission adopted a plan to maintain the existing high-cost loop support program, with some modifications, for those rural carriers. See *Rural Task Force Order*, 16 FCC Rcd 11244; see also *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, WC Docket No. 05-337, Order, 21 FCC Rcd 5514, 5515, para. 2 (2006) (extending rules, which originally had been designed to last for five years, rules until such time that the Commission “adopts new high-cost support rules for rural carriers”). Because some price cap carriers meet the definition of a rural carrier under the 1996 Act, however, those companies still receive support today based on their embedded costs in some study areas.

<sup>207</sup> LSS is intended to support the cost of switching equipment; it provides support for study areas with 50,000 or fewer access lines. See 47 C.F.R. §§ 54.301, 36.125(f)(j); see also *infra* para. 253. IAS was created as part of the May 2000 *CALLS Order*; it was designed to offset certain reductions in price cap carriers’ interstate access charges made in the same order. See *CALLS Order*, 15 FCC Rcd at 12974-75, para. 30; see also *USF/ICC Transformation NPRM*, 26 FCC Rcd at 4633-34, paras. 229-31. Only those carriers that were price cap carriers at the time of the *CALLS Order* receive IAS, however, so the Commission has permitted those carriers that have transitioned from rate-of-return regulation to price cap regulation subsequent to that order to continue to receive ICLS (which is ordinarily available only to rate-of-return carriers) on a frozen basis—such support is known as frozen ICLS. See, e.g., *Windstream Petition for Conversion to Price Cap Regulation and for Limited Waiver Relief*, 23 FCC Rcd 5294, 5302-04, paras. 19-22 (2008).

<sup>208</sup> See *Windstream USF/ICC Transformation NPRM Comments* at 9; Letter from Jennie B. Chandra, Windstream Communications, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, et al. (filed June 30, 2011); Letter from Michael D. Saperstein, Jr., Frontier Communications, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, et al. (filed July 26, 2011).

<sup>209</sup> See *Further Inquiry into Certain Issues in the Universal Service-Intercarrier Compensation transformation Proceeding*, WC Docket Nos. 10-90, 07-135, 05-337, 03-109, CC Docket Nos. 01-92, 96-45, GN Docket No. 09-51, Public Notice, DA 11-1348, at 10 (Wireline Comp. Bur. rel. Aug. 3, 2011) (*August 3 Public Notice*). NASUCA generally supported the proposal to combine disparate support mechanisms, while noting that it cannot evaluate the proposed targeting of support without knowing which carriers will receive more and which less. See *NASUCA August 3 PN Comments* at 97-98. We do not think, however, that our decision on whether this interim measure appropriately advances our goals depends on a specific analysis of how much money flows to particular price cap carriers. The Rural Broadband Alliance objects to any use of the existing cost model to determine support levels, arguing that the only currently appropriate means to provide support is on a rate-of-return basis. *Rural Broadband Alliance August 3 PN Comments*, Attach. at 23-24. We find the Rural Broadband Alliance’s undeveloped and unsupported objections to be without merit.

<sup>210</sup> *August 3 Public Notice* at 10. No commenter offered a proposal regarding the specific amount of support that should be provided through such a mechanism nor did any specify the public interest obligations that should be associated with such support.

132. *Discussion.* Below, we adopt a framework for the Connect America Fund that will provide support in price cap territories based on a combination of competitive bidding and a forward-looking cost model. Developing and implementing such a cost model with appropriate opportunities for public inspection and comment and finalizing the rules for competitive bidding are expected to take a year or more. In order to immediately start to accelerate broadband deployment to unserved areas across America, we modify our rules to provide support to price cap carriers under a transitional distribution mechanism, CAF Phase I.

133. Specifically, effective January 1, 2012, we freeze all support under our existing high-cost support mechanisms, HCLS,<sup>211</sup> forward-looking model support (HCMS), safety valve support, LSS, IAS, and ICLS, on a study area basis for price cap carriers and their rate-of-return affiliates. On an interim basis, we will provide frozen high-cost support to such carriers equal to the amount of support each carrier received in 2011 in a given study area.<sup>212</sup> Frozen high-cost support will be reduced to the extent that a carrier's rates for local voice service fall below an urban local rate floor that we adopt below to limit universal service support where there are artificially low rates.<sup>213</sup> In addition to frozen high-cost support, we will distribute up to \$300 million in incremental support to price cap carriers and their rate of return affiliates using a simplified forward-looking cost estimate, based on our existing cost model.

134. This simplified, interim approach is based on a proposal in the record from several carriers.<sup>214</sup> Support will be determined as follows: First, a forward-looking cost estimate will be generated for each wire center served by a price cap carrier. Our existing forward-looking cost model, designed to estimate the costs of providing voice service, generates estimates only for wire centers served by non-rural carriers; it cannot be applied to areas served by rural carriers without obtaining additional data from those carriers. The simplest, quickest, and most efficient means to provide support solely based on forward-looking costs for both rural and non-rural price cap carriers is to extend the existing cost model by using an equation designed to reasonably predict the output of the existing model for wire centers it already applies to, and apply it to data that are readily available for wire centers in all areas served by price cap carriers and their affiliates, including areas the current model does not apply to.<sup>215</sup> Three price cap carriers submitted an estimated cost equation that was derived through a regression analysis of support provided under the existing high-cost model, and they submitted, under protective order, the data necessary to replicate their analysis.<sup>216</sup> No commenter objected to the proponents' cost-

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<sup>211</sup> HCLS includes SNA.

<sup>212</sup> Frozen high-cost support amounts will be calculated by USAC, and will be equal to the amount of support disbursed in 2011, without regard to prior period adjustments related to years other than 2011 and as determined by USAC on January 31, 2012. USAC shall publish each carrier's frozen high-cost support amount 2011 support, as calculated, on its website, no later than February 15, 2012. As a consequence of this action, rate-of-return operating companies that will be treated as price cap areas will no longer be required to perform cost studies for purposes of calculating HCLS or LSS, as their support will be frozen on a study area basis as of year-end 2011.

<sup>213</sup> See *infra* Section VII.D.5. We note that price cap carriers' rates in some areas are currently well below the urban local rate average. See *infra* note 380.

<sup>214</sup> See Letter from Cathy Carpino, AT&T, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, et al. (filed Oct. 21, 2011); see also *infra* note 216.

<sup>215</sup> We note that the State Members of the Joint Board recommended as part of their comprehensive plan that the Commission continue to use its existing cost model, with some modifications. State Members *USF/ICC Transformation NPRM* Comments at 37. They also suggested that "statistical cost models are a potentially promising substitute for the engineering-based cost models currently in use." *Id.* at 38.

<sup>216</sup> See Letter from Jennie B. Chandra, Windstream Communications, Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 10-90, et al. (filed June 30, 2011) (detailing the regression analysis and the proposed cost-estimation equation); Letter from Jennie B. Chandra, Windstream Communications, Inc., to Marlene H. Dortch, (continued...)