

IV. Definition of Universal Service: What Services to Support 56

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IV. DEFINITION OF UNIVERSAL SERVICE: WHAT SERVICES TO SUPPORT**A. Overview**

56. Section 254(c)(1) requires the Joint Board to recommend, and the Commission to establish, the services that should be supported by federal universal service support mechanisms. Based on the principles embodied in section 254, and guided by the recommendation of the Joint Board, we define the "core" or "designated" services that will receive universal service support as: single-party service; voice grade access to the public switched network; Dual Tone Multifrequency ("DTMF")⁽⁶⁸⁾ signaling or its functional equivalent; access to emergency services including, in some circumstances, access to 911 and Enhanced 911 ("E911"),⁽⁶⁹⁾ access to operator services; access to interexchange service; access to directory assistance; and toll limitation services for qualifying low-income consumers, as described in section VIII. In order to receive universal service support, eligible carriers must offer each of the designated services. A carrier that currently is unable to provide single-party service may petition its state commission to permit this carrier to receive universal service support for a designated period of time while the carrier completes the network upgrades needed to offer single-party service. In addition, carriers currently incapable of providing access to E911 service and toll limitation services may, for a specific period of time, also receive universal service support while completing network upgrades required for them to offer these services.

57. All business and residential connections that are currently supported will continue to be supported prior to the operation of a forward-looking universal service support methodology. In assessing whether "quality services" are available, consistent with section 254(b)(1), because we will rely on existing data collection mechanisms, including data provided by states, we refrain from imposing additional data collection requirements at this time. Finally, the Commission will convene a Federal-State Joint Board to review the definition of universal service on or before January 1, 2001.⁽⁷⁰⁾

B. Designated Services

1. Background

58. Section 254(c)(1) states that "[u]niversal service [is] an evolving level of telecommunications services that the Commission shall establish periodically under this section, taking into account advances in telecommunications and information technologies and services."⁽⁷¹⁾ Section 254(c)(2) states that "[t]he Joint Board may, from time to time, recommend to the Commission modifications in the definition of the services that are supported by Federal universal service support mechanisms."⁽⁷²⁾ Moreover, the 1996 Act's legislative history provides that "[t]he Commission is given specific authority to alter the definition from time to time" in order to "take into account advances in telecommunications and information technology."⁽⁷³⁾

59. Section 254(c)(1)(A)-(D) requires the Joint Board and the Commission to "consider the extent to which . . . telecommunications services" included in the definition of universal service:

- (1) are essential to education, public health, or public safety;
- (2) have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers;
- (3) are being deployed in public telecommunications networks by telecommunications carriers; and
- (4) are consistent with the public interest, convenience and necessity.⁽⁷⁴⁾

The legislative history of this section instructs that "[t]he definition . . . should be based on a consideration of the four criteria set forth in the subsection."⁽⁷⁵⁾

60. Section 254(b) establishes the principle that "consumers in all regions of the Nation . . . should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas. . . ."⁽⁷⁶⁾ The Joint Board recommended that all of the services and functionalities proposed in the NPRM be included in the general definition of services supported under section 254(c)(1).⁽⁷⁷⁾ The Joint Board also recommended that access to interexchange service -- meaning the ability of a subscriber to place and receive interexchange calls -- be included as a supported service.⁽⁷⁸⁾ Finally,

the Joint Board recommended supporting access to directory assistance, which the Board defined as the ability to place a call to directory assistance.⁽⁷⁹⁾

2. Discussion

61. We generally adopt the Joint Board's recommendation and define the "core" or "designated" services that will be supported by universal service support mechanisms as: single-party service; voice grade access to the public switched network; DTMF signaling or its functional equivalent; access to emergency services; access to operator services; access to interexchange service; access to directory assistance; and toll limitation services for qualifying low-income consumers. In arriving at this definition, we have adopted the Joint Board's analysis and recommendation that, for purposes of section 254(c)(1), the Commission define "telecommunications services" in a functional sense, rather than on the basis of tariffed services. The record in this proceeding demonstrates ample support for the inclusion of the services, as defined in a functional sense, recommended by the Joint Board within the general definition of universal service.⁽⁸⁰⁾ We find, as the Joint Board concluded, that this definition of core universal services promotes competitive neutrality because it is technology neutral, and provides more flexibility for defining universal service than would a services-only approach.⁽⁸¹⁾ We also adopt the Joint Board's analysis and finding that all four criteria enumerated in section 254(c)(1) must be considered, but not each necessarily met, before a service may be included within the general definition of universal service, should it be in the public interest.⁽⁸²⁾ We interpret the statutory language, particularly the word "consider," as providing flexibility for the Commission to establish a definition of services to be supported, after it considers the criteria enumerated in section 254(c)(1)(A)-(D). Thus, as discussed below, we conclude that the core services that we have designated to receive universal service support are consistent with the statutory criteria in section 254(c)(1).

62. Single-Party Service. We agree with and adopt the Joint Board's conclusion that single-party service is widely available and that a majority of residential customers subscribe to it, consistent with section 254(c)(1)(B).⁽⁸³⁾ Moreover, we concur with the Joint Board's conclusion that single-party service is essential to public health and safety in that it allows residential consumers access to emergency services without delay.⁽⁸⁴⁾ Single-party service also is generally consistent with the public interest, convenience, and necessity because, by eliminating the sharing required by multi-party service, single-party service significantly increases the consumer's ability to place calls irrespective of the actions of other network users and with greater privacy than party line service can assure. In addition, single-party service is being deployed in public telecommunications networks by telecommunications carriers. We adopt the Joint Board's finding that the term "single-party service" means that only one customer

will be served by each subscriber loop or access line.⁽⁸⁵⁾ Eligible carriers must offer single-party service in order to receive support regardless of whether consumers choose to subscribe to single- or multi-party service. In addition, to the extent that wireless providers use spectrum shared among users to provide service, we find that wireless providers offer the equivalent of single-party service when they offer a dedicated message path for the length of a user's particular transmission. We concur with the Joint Board's recommendation not to require wireless providers to offer a single channel dedicated to a particular user at all times.⁽⁸⁶⁾

63. Voice Grade Access to the Public Switched Network. As recommended by the Joint Board, we conclude that voice grade access includes the ability to place calls, and thus incorporates the ability to signal the network that the caller wishes to place a call.⁽⁸⁷⁾ Voice grade access also includes the ability to receive calls, and thus incorporates the ability to signal the called party that an incoming call is coming.⁽⁸⁸⁾ We agree that these components are necessary to make voice grade access fully beneficial to the consumer. We agree with and adopt the Joint Board's finding that, consistent with section 254(c)(1), voice grade access to the public switched network is an essential element of telephone service, is subscribed to by a substantial majority of residential customers, and is being deployed in public telecommunications networks by telecommunications carriers. In addition, we find voice grade access to be essential to education, public health, and public safety because it allows consumers to contact essential services such as schools, health care providers, and public safety providers. For this reason, it is also consistent with the public interest, convenience, and necessity. Accordingly, we adopt the Joint Board's recommended definition of voice grade access to the public switched network among the core services designated pursuant to section 254(c)(1).

64. We also adopt the Joint Board's recommendation that voice grade access should occur in the frequency range between approximately 500 Hertz and 4,000 Hertz for a bandwidth of approximately 3,500 Hertz.⁽⁸⁹⁾ We note that, although a substantial number of commenters favored supporting the Joint Board's definition of voice grade access,⁽⁹⁰⁾ few supported greater bandwidth capacity.⁽⁹¹⁾ We are unpersuaded by Bar of New York's arguments in favor of including among the core services a higher level of telecommunications bandwidth capacity than was recommended by the Joint Board. Bar of New York notes the Joint Board's observation that services such as video-on-demand, medical imaging, two-way interactive distance learning and high definition television might require bandwidth capacity of 1.544 Mbps.⁽⁹²⁾ Although we conclude in sections X and XI below that certain higher bandwidth services should be supported under section 254(c)(3) for eligible schools, libraries, and rural health care providers,⁽⁹³⁾ we decline to adopt, pursuant to section 254(c)(1), a higher bandwidth than that recommended by the Joint Board. We conclude, except as further designated with respect to eligible schools, libraries and health care providers, that voice grade

access, and not high speed data transmission, is the appropriate goal of universal service policies at this time because we are concerned that supporting an overly expansive definition of core services could adversely affect all consumers by increasing the expense of the universal service program and, thus, increasing the basic cost of telecommunications services for all. As discussed above, voice grade access is subscribed to by a substantial majority of residential customers, and is being deployed in public telecommunications networks by telecommunications carriers. In contrast, the record in this proceeding does not demonstrate that the higher bandwidth services and data transmission capabilities advocated by Bar of New York and MFS are, at this time, necessary for the public health and safety and that a substantial majority of residential customers currently subscribe to these services.⁽⁹⁴⁾ Congress recognized, however, that the definition of services supported by universal service should advance with technology. Thus, we will periodically re-examine whether changes in technology, network capacity, consumer demand, and service deployment warrant a change in our definition of supported services.⁽⁹⁵⁾

65. Support for Local Usage. We agree with the Joint Board that the Commission should determine the level of local usage to be supported by federal universal service mechanisms and that the states are best positioned to determine the local usage component for purposes of state universal service mechanisms.⁽⁹⁶⁾ The Joint Board indicated strong record support for including a local usage component within the definition of universal service.⁽⁹⁷⁾ Further, we agree with the Joint Board that, in order for consumers in rural, insular, and high cost areas to realize the full benefits of affordable voice grade access, usage of, and not merely access to, the local network should be supported.⁽⁹⁸⁾

66. We find, consistent with the Joint Board's conclusion, that we have the authority to support a certain portion of local usage, pursuant to the universal service principles adopted above.⁽⁹⁹⁾ In particular, section 254(b)(1) states that "[q]uality services should be available at just, reasonable, and affordable rates." As a result, ensuring affordable "access" to those services is not sufficient. We are unpersuaded by commenters who argue generally against supporting local usage,⁽¹⁰⁰⁾ because those arguments ignore Congress's stated intent that the universal service policies shall be based, *inter alia*, on the principle that services should be available at affordable rates, as set forth in section 254(b)(1). As articulated by Ohio PUC, universal service must encompass the ability to use the network, including the ability to place calls at affordable rates.⁽¹⁰¹⁾ We find that both access to and use of the public switched network at rates that are "just, reasonable and affordable," are necessary to promote the principles embodied in section 254(b)(1).

67. We are also concerned, however, that consumers might not receive the benefits of universal service support unless we determine a minimum amount of local usage that must be included within the supported services. An eligible carrier, particularly one that recovers a substantial portion of its costs through per-minute charges, could conceivably collect universal service support designed to promote affordable use of the network without, in turn, reducing the per-minute rates charged to its customers. Unless we are able to quantify an amount of local usage that must be provided without additional charge to the consumer by carriers receiving universal service support for serving rural, insular, and high costs areas, we believe there is a potential that the consumer would have to pay additional per-minute fees and would not receive the benefits universal service is designed to promote. We intend to consider this possible scenario in our Further Notice of Proposed Rulemaking ("FNPRM") on a forward-looking economic cost methodology, which will be issued by June 1997. As discussed in section VII below, we are making various changes to the existing universal service support mechanisms -- including making support portable to competing carriers -- that will become effective on January 1, 1998.⁽¹⁰²⁾ The Commission will also separately seek further information regarding, for example, local usage, and local usage patterns, in order to determine the appropriate amount of local usage that should be provided by carriers receiving universal service support. We will, by the end of 1997, quantify the amount of local usage that carriers receiving universal service support will be required to provide.

68. At this time, we conclude that it is important to determine a minimum level of local usage in order to implement a forward-looking economic cost methodology, as described below in section VII. Without a prespecified amount of usage, it is not possible for forward-looking economic cost methodologies to determine accurately the cost of serving customers in high cost areas. The forward-looking economic cost methodologies require usage information to determine capacity requirements, such as switch size.⁽¹⁰³⁾

69. In addition, determining and supporting a minimum level of usage for local service is important to further our principle of competitive neutrality, which includes technological neutrality. Different means of local service entry and competition can have markedly different cost structures. For instance, a wireline telephone system might have large initial "access" costs and relatively low "usage" or per-minute costs. In contrast, a wireless technology might have moderate "access" costs but high per-minute costs than a wireline network. In such a situation, merely supporting "access" without supporting a certain amount of local usage could favor unfairly a particular technology. This result may violate our principle of competitive neutrality.

70. Further, the Joint Board anticipated that competitive bidding may become an efficient method of determining universal service support amounts.⁽¹⁰⁴⁾ Defining minimum levels of usage is critical to the construction of a competitive bidding system for providing universal service to high cost areas. An auction for only the "access" portion of providing local service would be neither competitively nor technologically neutral, because competitors and technologies with low "access" costs yet high per-minute costs would be unduly favored in such an auction. This could result in awarding universal service support to a less efficient technology, which is the precise result that a competitive bidding system is meant to avoid. In addition, a carrier with low access costs could then charge high per-minute rates to consumers, which would increase consumers' overall bills, rather than reducing them, as is the expected result of competition. Such a result is not consistent with the principle in section 254(b)(1) that these "services" are to be "affordable."

71. DTMF Signaling. The Joint Board recommended including DTMF signaling or its digital functional equivalent among the supported services, and we adopt this recommendation.⁽¹⁰⁵⁾ We find that the network benefit that emanates from DTMF signaling, primarily rapid call set-up, is consistent with the public interest, convenience, and necessity, pursuant to section 254(c)(1)(D). Although consumers do not elect to subscribe to DTMF signaling, *per se*, we find, as the Joint Board concluded, that DTMF signaling provides network benefits, such as accelerated call set-up, that are essential to a modern telecommunications network. In addition, we agree with NENA's characterization of DTMF signaling as a potential life- and property-saving mechanism because it speeds access to emergency services. Thus, we find that supporting DTMF signaling is essential to public health and public safety, consistent with section 254(c)(1)(A), and is being deployed in public telecommunications networks by telecommunications carriers, consistent with section 254(c)(1)(C). We also adopt the Joint Board's conclusion that other methods of signaling, such as digital signaling, can provide network benefits equivalent to those of DTMF signaling. In particular, we note that wireless carriers use out-of-band digital signaling mechanisms for call set-up, rather than DTMF signaling. Consistent with the principle of competitive neutrality, we find it is appropriate to support out-of-band digital signaling mechanisms as an alternative to DTMF signaling.⁽¹⁰⁶⁾ Accordingly, we include DTMF signaling and equivalent digital signaling mechanisms among the services supported by federal universal service mechanisms.

72. Access to Emergency Services. In addition, we concur with the Joint Board's conclusion that access to emergency services, including access to 911 service, be supported by universal service mechanisms.⁽¹⁰⁷⁾ We agree with the Joint Board's conclusion that access to emergency service i.e., the ability to reach a public emergency service provider, is "widely recognized as essential to . . . public safety," consistent with section 254(c)(1)(A).⁽¹⁰⁸⁾ Due to its obvious public safety benefits, including access to emergency services among the core services is also

consistent with the public interest, convenience, and necessity. Further, consistent with the Joint Board's recommendation and NENA's comments in favor of supporting access to 911 service, we define access to emergency services to include access to 911 service.⁽¹⁰⁹⁾ Noting that nearly 90 percent of lines today have access to 911 service capability, the Joint Board found that access to 911 service is widely deployed and available to a majority of residential subscribers.⁽¹¹⁰⁾ For these reasons, we include telecommunications network components necessary for access to emergency services, including access to 911, among the supported services.

73. We also include the telecommunications network components necessary for access to E911 service among the services designated for universal service support. Access to E911 is essential to public health and safety because it facilitates the determination of the approximate geographic location of the calling party. We recognize, however, that the Commission does not currently require wireless carriers to provide access to E911 service.⁽¹¹¹⁾ As set forth in the Commission's *Wireless E911 Decision*, access to E911 includes the ability to provide Automatic Numbering Information ("ANI"),⁽¹¹²⁾ which permits that the PSAP have call back capability if the call is disconnected, and Automatic Location Information ("ALI"),⁽¹¹³⁾ which permits emergency service providers to identify the geographic location of the calling party. We recognize that wireless carriers are currently on a timetable, established in the *Wireless E911 Decision*, for implementing both aspects of access to E911.⁽¹¹⁴⁾ For universal service purposes, we define access to E911 as the capability of providing both ANI and ALI. We note, however, that wireless carriers are not required to provide ALI until October 1, 2001.⁽¹¹⁵⁾ Nevertheless, we conclude that, because of the public health and safety benefits provided by access to E911 services the telecommunications network components necessary for such access will be supported by federal universal service mechanisms for those carriers that are providing it.⁽¹¹⁶⁾ We recognize that wireless providers will be providing access to E911 in the future to the extent that the relevant locality has implemented E911 service. In addition, because the *Wireless E911 Decision* establishes that wireless carriers are required to provide access to E911 only if a mechanism for the recovery of costs relating to the provision of such services is in place, there is at least the possibility that wireless carriers receiving universal service support will be compensated twice for providing access to E911.⁽¹¹⁷⁾ We intend to explore whether the possibility is in fact being realized and, if so, what steps we should take to avoid such over-recovery in a Further Notice of Proposed Rulemaking.

74. Consistent with the Joint Board's recommendation, we support the telecommunications network components necessary for access to 911 service and access to E911 service, but not the underlying services themselves, which combine telecommunications service and the operation of the PSAP and, in the case of E911 service, a centralized database containing information identifying

approximate end user locations.⁽¹¹⁸⁾ As noted by the Joint Board and commenters, the telecommunications network represents only one component of 911 and E911 services; local governments provide the PSAP and generally support the operation of the PSAP through local tax revenues.⁽¹¹⁹⁾ We conclude that both 911 service and E911 service include information service components that cannot be supported under section 254(c)(1), which describes universal service as "an evolving level of telecommunications services."⁽¹²⁰⁾ Accordingly, we include only the telecommunications network components necessary for access to 911 and E911 services among the services that are supported by federal universal service mechanisms.

75. Access to Operator Services. In addition, we adopt the Joint Board's recommendation to include access to operator services in the general definition of universal service.⁽¹²¹⁾ As the Joint Board concluded, access to operator services is widely deployed and used by a majority of residential customers.⁽¹²²⁾ For purposes of defining the core section 254(c)(1) services and consistent with the Joint Board's recommendation, we base our definition of "operator services" on the definition the Commission used to define the duties imposed upon LECs by section 251(b)(3), namely, "any automatic or live assistance to a consumer to arrange for billing or completion, or both, of a telephone call."⁽¹²³⁾ We reject CWA's argument that access to operator services should include "initial contact with a live operator," which, it contends, is "indispensable for users in public health or safety emergencies."⁽¹²⁴⁾ Contrary to the suggestion of CWA, there is no evidence on the record to suggest that automated systems provide inadequate access to operator services for consumers in emergency situations. We also do not require initial contact with a live operator for purposes of operator services because we expect that most consumers will more appropriately rely upon their local 911 service in an emergency situation. To the extent that access to operator services enables callers to place collect, third-party billed, and person-to-person calls, among other things, we find that such access may be essential to public health and is consistent with the public interest, convenience, and necessity.

76. Access to Interexchange Service. We adopt the Joint Board's recommendation to include access to interexchange service among the services supported by federal universal service mechanisms.⁽¹²⁵⁾ We conclude that access to interexchange service means the use of the loop, as well as that portion of the switch that is paid for by the end user, or the functional equivalent of these network elements in the case of a wireless carrier, necessary to access an interexchange carrier's network.⁽¹²⁶⁾ This decision is consistent with the principle set forth in section 254(b)(3) that "consumers . . . should have access to telecommunications and information services including interexchange services." In addition, we agree with the Joint Board that the majority of residential customers currently have access to interexchange service, thus satisfying a criterion set forth in section 254(c)(1)(B).⁽¹²⁷⁾ Access to interexchange service

also is widely deployed in public telecommunications networks by telecommunications carriers. Further, as observed by the Joint Board and commenters, access to interexchange service is essential for education, public health, and public safety, particularly for customers who live in rural areas and require access to interexchange service to reach medical and emergency services, schools, and local government offices.⁽¹²⁸⁾ For these reasons, access to interexchange service also meets the public interest, convenience, and necessity criterion of section 254(c)(1)(D).

77. Regarding GCI's argument that interexchange service should not be supported because it is a competitive service, we emphasize that universal service support will be available for access to interexchange service, but not for the interexchange or toll service.⁽¹²⁹⁾ We find that the record does not support including toll service among the services designated for support, although, as discussed in section V below, we find that the extent to which rural consumers must place toll calls to reach essential services should be considered when assessing affordability. Nevertheless, universal service should not be limited only to "non-competitive" services. One of the fundamental purposes of universal service is to ensure that rates are affordable regardless of whether rates are set by regulatory action or through the competitive marketplace. GCI's argument implies that, if there were multiple carriers competing to provide, for example, basic dialtone service at \$1000 per month, there could be no universal service support because the price was set through competition. Such a result would be inconsistent with Congress's intentions to preserve and advance universal service in adopting section 254. We note that section 254(k), which forbids telecommunications carriers from using services that are not competitive to subsidize competitive services, is not inconsistent with our conclusion that it is permissible to support competitive services.⁽¹³⁰⁾

78. Consistent with the Joint Board's recommendation, we do not include equal access to interexchange service among the services supported by universal service mechanisms.⁽¹³¹⁾ Equal access to interexchange service permits consumers to access the long distance carrier to which the consumer is presubscribed by dialing a 1+ number. As discussed below in section VI, including equal access to interexchange service among the services supported by universal service mechanisms would require a Commercial Mobile Radio Service (CMRS) provider to provide equal access in order to receive universal service support. We find that such an outcome would be contrary to the mandate of section 332(c)(8), which prohibits any requirement that CMRS providers offer "equal access to common carriers for the provision of toll services."⁽¹³²⁾ Accordingly, we decline to include equal access to interexchange service among the services supported under section 254(c)(1).

79. Contrary to Ameritech's argument, competitive neutrality does not require that, in areas where incumbent LECs are required to offer equal access to interexchange service, other carriers receiving universal service support in that area should also be obligated to provide equal access.⁽¹³³⁾ As discussed in section VI below, statutory and policy considerations preclude us from imposing "symmetrical" service obligations on all eligible carriers, including the obligation to provide equal access to interexchange service, as a condition of eligibility under section 214(e). We note that the Commission has not required CMRS providers to provide dialing parity⁽¹³⁴⁾ to competing providers under section 251(b)(3) because the Commission has not yet determined that any CMRS provider is a LEC.⁽¹³⁵⁾ We seek to implement the universal service provisions of section 254 in a manner that is not "biased toward any particular technologies," consistent with the Joint Board's recommendation.⁽¹³⁶⁾ In light of the provision of section 332(c)(8) stating that non-LEC CMRS providers are statutorily exempt from providing equal access⁽¹³⁷⁾ and because the Commission has not determined that any CMRS providers should be considered LECs,⁽¹³⁸⁾ we find that supporting equal access would undercut local competition and reduce consumer choice and, thus, would undermine one of Congress's overriding goals in adopting the 1996 Act.⁽¹³⁹⁾ Accordingly, we do not include equal access to interexchange carriers in the definition of universal service at this time.

80. Access to Directory Assistance and White Pages Directories. We also adopt the Joint Board's recommendation to include access to directory assistance, specifically, the ability to place a call to directory assistance, among the core services pursuant to section 254(c)(1).⁽¹⁴⁰⁾ Access to directory assistance enables customers to obtain essential information, such as the telephone numbers of government, business, and residential subscribers. We agree with and adopt the Joint Board's analysis and conclusion that directory assistance is used by a substantial majority of residential customers, is widely available, is essential for education, public health, and safety, and is consistent with the public interest, convenience, and necessity.⁽¹⁴¹⁾ Accordingly, we conclude that providing universal service support for access to directory assistance is consistent with the statutory criteria of section 254(c)(1).

81. We further agree with the Joint Board's recommendation not to support white pages directories and listings.⁽¹⁴²⁾ We concur with the Joint Board's determination that white pages listings are not "telecommunications services" as that term is defined in the Act.⁽¹⁴³⁾ We disagree with West Virginia Consumer Advocate's assertion that it is inconsistent to support access to directory assistance, but not white pages directory listings.⁽¹⁴⁴⁾ As the Joint Board recognized, unlike white pages directories and listings, access to directory assistance is a functionality of the loop and, therefore, is a service in the functional sense.⁽¹⁴⁵⁾ While we conclude that white pages directories do not meet the statutory requirements of section 254(c)(1), we find that they provide consumers with valuable information,

encourage usage of the network, and may facilitate access to telecommunications and information services.⁽¹⁴⁶⁾ For these reasons, we encourage carriers to continue to make white pages directories available to consumers.

82. Toll Limitation Services. Additionally, we include the toll limitation services for qualifying low-income consumers, as discussed more fully below in section VIII, among those that will be supported pursuant to section 254(c). In the Recommended Decision, the Joint Board concluded that Lifeline customers should have access to toll control services, at the customer's option, and at no charge, based on data showing that uncontrollable toll charges were a major factor in low subscribership levels among low-income consumers.⁽¹⁴⁷⁾ Although the record does not indicate that a majority of residential subscribers currently subscribe to toll limitation services, the Joint Board found that telecommunications carriers are deploying toll limitation services in public telecommunications networks, consistent with section 254(c)(1)(C).⁽¹⁴⁸⁾ We find that including these services within the supported services is essential to the public health and safety because, as discussed in section VIII below, toll limitation services will help prevent subscribership levels for low-income consumers from declining. Thus, we find that toll limitation services will promote access to the public switched network for low-income consumers⁽¹⁴⁹⁾ and, therefore, are in the public interest, consistent with the criteria of section 254(c)(1).⁽¹⁵⁰⁾

83. Access to Internet Services. We agree with the Joint Board's determination that Internet access consists of more than one component.⁽¹⁵¹⁾ Specifically, we recognize that Internet access includes a network transmission component, which is the connection over a LEC network from a subscriber to an Internet Service Provider, in addition to the underlying information service. We also concur with the Joint Board's observation that voice grade access to the public switched network usually enables customers to secure access to an Internet Service Provider, and, thus, to the Internet.⁽¹⁵²⁾ We conclude that the information service component of Internet access cannot be supported under section 254(c)(1), which describes universal service as "an evolving level of telecommunications services."⁽¹⁵³⁾ Furthermore, to the extent customers find that voice grade access to the public switched network is inadequate to provide a sufficient telecommunications link to an Internet service provider, we conclude that such higher quality access links should not yet be included among the services designated for support pursuant to section 254(c)(1). We find that a network transmission component of Internet access beyond voice grade access should not be supported separately from voice grade access to the public switched network because the record does not indicate that a substantial majority of residential customers currently subscribe to Internet access by using access links that provide higher quality than voice grade access.⁽¹⁵⁴⁾ In addition, although access to Internet services offers benefits that contribute to education and public health, we

conclude that it is not "*essential* to education, public health, or public safety" as set forth in section 254(c)(1)(A).⁽¹⁵⁵⁾ We conclude that our decision not to support this component is consistent with the Joint Board's general finding that support beyond that provided for voice grade access to the public switched network is not warranted at this time.⁽¹⁵⁶⁾ Under the more expansive authority granted in section 254(h), however, we agree that supporting Internet access under that section is consistent with Congress's intent to support Internet access for eligible schools, libraries, and rural health care providers.⁽¹⁵⁷⁾ Finally, just as the Joint Board concluded that increasing demand for Internet service will provide consumers with broader accessibility to Internet service providers,⁽¹⁵⁸⁾ we anticipate that the demand for Internet service will cause carriers to offer higher bandwidth services and data rates for residential customers.

84. Other Services. We conclude that, at this time, no other services that commenters have proposed to include in the general definition of universal service substantially meet the criteria set forth in section 254(c)(1).⁽¹⁵⁹⁾ We emphasize that this section also defines universal service as "evolving" and, therefore, as described below, the Commission will review the services supported by universal service mechanisms no later than January 1, 2001. In addition, as discussed below in section III, we find that the issues relating to the telecommunications needs of individuals with disabilities, including accessibility and affordability of services, will be addressed in the context of the Commission's implementation of section 255.⁽¹⁶⁰⁾

85. Moreover, we disagree with the view expressed by Benton that universal service should be defined by transport and termination requirements rather than services.⁽¹⁶¹⁾ As discussed above, we concur with the Joint Board's recommendation that, for purposes of section 254(c)(1), the Commission define telecommunications services in a functional sense. We find that Benton's concerns that this approach will favor "carriers traditionally associated with" the network elements needed to provide the designated services are unfounded.⁽¹⁶²⁾ Contrary to Benton's contention, the record does not contradict the Joint Board's conclusion that none of the designated services creates a barrier to entry for potential new competing carriers or otherwise impedes the ability of wireless and other telecommunications carriers to provide universal service.⁽¹⁶³⁾

86. Further, we do not adopt the proposal advocated by GTE and others to require eligible carriers to offer the designated services on an unbundled basis.⁽¹⁶⁴⁾ As discussed more fully below in section VI, based on our analysis of section 214(e), we conclude that the statutory language set forth in that section prevents the Commission and the states from imposing on eligible carriers requirements that are not included in the statutory language.⁽¹⁶⁵⁾ Even assuming that section 214(e) permitted the Commission to impose requirements on eligible carriers, we would

not be inclined to adopt GTE's proposal because we find that, in areas in which there is no competition, states are charged with setting rates for local services and, where competing carriers are offering universal services, consumers would choose to receive service from the carrier that offers the service package that best suits the consumer's needs.

87. Moreover, we are mindful of the concern expressed by commenters⁽¹⁶⁶⁾ that an overly broad definition of universal service might have the unintended effect of creating a barrier to entry for some carriers because, as discussed below in section IV.C.2, carriers must provide each of the core services in order to be eligible for universal service support. We concur with the Joint Board's conclusion that conditioning a carrier's eligibility for support upon its provision of the core services will not impose an anti-competitive barrier to entry.⁽¹⁶⁷⁾ We note that other services proposed by commenters, at a later time, may become more widely deployed than they are at present, or otherwise satisfy the statutory criteria by which we and the Joint Board are guided. When reviewing the definition of universal service, as anticipated by section 254(c)(2), the Commission and the Joint Board, after considering the implications for competition, may find that additional services proposed by commenters should be included in our list of core services.

C. Feasibility of Providing Designated Services

1. Background

88. Section 214(e)(1)(A) requires eligible carriers to "offer the services that are supported by [f]ederal universal service support mechanisms."⁽¹⁶⁸⁾ The Joint Board recommended that, pursuant to section 214(e), carriers designated as eligible telecommunications providers should be required to offer all of the services designated for universal service support.⁽¹⁶⁹⁾ Recognizing that some incumbent LECs may currently be unable to provide single-party service, however, the Joint Board recommended that state commissions be permitted to grant a transition period to otherwise eligible carriers that initially are unable to provide single-party service but only upon a finding that "exceptional circumstances" warrant a transition period.⁽¹⁷⁰⁾ In addition, the Joint Board recommended supporting access to E911 service, to the extent that eligible carriers currently are capable of providing such access and the relevant locality has chosen to implement E911 service.⁽¹⁷¹⁾ Similarly, the Joint Board recommended that toll blocking or control services should be supported when provided to eligible low-income consumers, to the extent that eligible carriers are technically capable of providing these services.⁽¹⁷²⁾

2. Discussion

89. Consistent with the Joint Board's recommendation, we conclude that eligible carriers must provide each of the designated services in order to receive universal service support.⁽¹⁷³⁾ In three limited instances, however, we conclude that the public interest requires that we allow a reasonable period during which otherwise eligible carriers may complete network upgrades required for them to begin offering certain services that they are currently incapable of providing. Given the Joint Board's finding that not all incumbent carriers are currently able to offer single-party service,⁽¹⁷⁴⁾ we find that excluding such carriers from eligibility for universal service support might leave some service areas without an eligible carrier, especially in areas where there currently is no evidence of competitive entry. Therefore, as to single-party service, we will permit state commissions, upon a finding of "exceptional circumstances," to grant an otherwise eligible carrier's request that, for a designated period, the carrier will receive universal service support while it completes the specified network upgrades necessary to provide single-party service. This is consistent with the Joint Board's recommendation that state commissions be permitted to grant requests by otherwise eligible carriers for a period to make necessary upgrades if they currently are unable to provide single-party service.⁽¹⁷⁵⁾

90. In addition, we conclude, consistent with the Joint Board's finding that some carriers are not currently capable of providing access to E911 service,⁽¹⁷⁶⁾ that it may be warranted to provide universal service support to carriers that are not required under Commission rules to provide E911 service and to carriers that are completing the network upgrades required for them to provide access to E911 service. As recommended by the Joint Board,⁽¹⁷⁷⁾ access to E911 will be supported only to the extent that the relevant locality has implemented E911 service.⁽¹⁷⁸⁾ If the relevant locality has not implemented E911 service, otherwise eligible carriers that are covered by the Commission's *Wireless E911 Decision* cited above are not required to provide such access at this time to qualify for universal service support. Even in cases in which the locality has implemented E911 service, some wireless carriers are not currently capable of providing access to E911 service. Although we have directed cellular, broadband PCS, and certain SMR carriers to provide access to E911 service, we set a five-year period during which these carriers must make the technical upgrades necessary to offer access to E911 service.⁽¹⁷⁹⁾ Consequently, requiring carriers to provide access to E911 service at this time may prevent many wireless carriers from receiving universal service support during the period that we have already determined to be appropriate for wireless carriers to complete preparations for their offering E911 service. We find that this would be contrary to the principle that universal service policies and rules be competitively neutral. In light of these considerations, we will, as described below, make some accommodation during the period in which these carriers are upgrading their systems.

91. The Joint Board envisioned granting a period to make upgrades while still receiving support only if a carrier could meet a "heavy burden that such a . . . period is necessary and in the public interest" and if "exceptional circumstances" warranted the granting of support during that period.⁽¹⁸⁰⁾ We find that the Joint Board's recommendation provides a reasoned and reasonable approach to ensuring access to single-party service while, at the same time, recognizing that "exceptional circumstances" may prevent certain carriers serving rural areas from offering single-party service. We conclude that this approach also makes sense in the context of toll limitation service and access to E911 when a locality has implemented E911 service. Accordingly, we conclude that a carrier that is otherwise eligible to receive universal service support but is currently incapable of providing single-party service, toll limitation service, or access to E911 in the case where the locality has implemented E911 service may, if it provides each of the other designated services, petition its state commission for permission to receive universal service support for the designated period during which it is completing the network upgrades required so that it can offer these services. A carrier that is incapable of offering one or more of these three specific universal services must demonstrate to the state commission that "exceptional circumstances" exist with respect to each service for which the carrier desires a grant of additional time to make network upgrades.

92. We emphasize that this relief should be granted only upon a finding that "exceptional circumstances" prevent an otherwise eligible carrier from providing single-party service, toll limitation, or access to E911 when the locality has implemented E911 service. A carrier can show that exceptional circumstances exist if individualized hardship or inequity warrants a grant of additional time to comply with the general requirement that eligible carriers must provide single-party service, toll limitation service, and access to E911 when the locality has implemented E911 service and that a grant of additional time to comply with these requirements would better serve the public interest than strict adherence to the general requirement that an eligible telecommunications carrier must be able to provide these services to receive universal service support. The period during which a carrier could receive support while still completing essential upgrades should extend only as long as the relevant state commission finds that "exceptional circumstances" exist and should not extend beyond the time that the state commission deems necessary to complete network upgrades. We conclude that this is consistent with the intent of section 214(e) because it will ensure that ultimately all eligible telecommunications carriers offer all of the services designated for universal service support.

93. We recognize that some state commissions already may have mandated single-party service for telecommunications service providers serving their jurisdictions.⁽¹⁸¹⁾ If a state commission has adopted a timetable by which carriers must offer single-party service, a carrier may rely upon that previously established

timetable and need not request another transition period for federal universal service purposes. Specifically, where a state has ordered a carrier to provide single-party service within a specified period pursuant to a state order that precedes the release date of this Order, the carrier may rely upon the timetable established in that order and receive universal service support for the duration of that period.

D. Extent of Universal Service Support

1. Background

94. Section 254(b)(3) states that "[c]onsumers in . . . high cost areas, should have access to telecommunications and information services. . . ." ⁽¹⁸²⁾ The Joint Board recommended that support be provided (1) for designated services carried on a single connection to a subscriber's primary residence, and (2) for designated services carried to businesses located in rural, insular and other high cost areas and with only single connections. ⁽¹⁸³⁾ The Joint Board concluded that single-connection residences and single-connection businesses both require access for health, safety, and employment reasons. ⁽¹⁸⁴⁾ The Joint Board found that support for a second connection is not necessary for a household to have "access" to telecommunications and information services, pursuant to section 254(b)(2). ⁽¹⁸⁵⁾ In addition, the Joint Board determined that universal service support should not be extended to second residences. ⁽¹⁸⁶⁾ The Joint Board reasoned that the additional cost of supporting second or vacation residences is not justified because owners of such residences can likely afford to pay rates that accurately reflect the carrier's costs and because second homes may not be occupied at all times. ⁽¹⁸⁷⁾

2. Discussion

95. The Joint Board recommended that support for designated services be limited to those carried on a single connection to a subscriber's primary residence and to businesses with only a single connection. ⁽¹⁸⁸⁾ We share the Joint Board's concern that providing universal service support in high cost areas for second residential connections, second residences, and businesses with multiple connections may be inconsistent with the goals of universal service in that business and residential consumers that presumably can afford to pay rates that reflect the carrier's costs to provide services nevertheless would receive supported rates. ⁽¹⁸⁹⁾ We are also mindful that overly expansive universal service support mechanisms potentially could harm all consumers by increasing the expense of telecommunications services for all.

96. In light of our determination below, however, to adopt a modified version of the existing universal service support system for high cost areas, we conclude, consistent with the proposal of the state Joint Board members,⁽¹⁹⁰⁾ that all residential and business connections in high cost areas that currently receive high cost support should continue to be supported for the periods set forth in section VII below.⁽¹⁹¹⁾ For rural telephone companies this means that both multiple business connections and multiple residential connections will continue to receive universal service support at least until January 1, 2001. We intend, however, to continue to evaluate the Joint Board's recommendation to limit support for primary residential connections and businesses with a single connection as we further develop a means of precisely calculating the forward-looking economic cost of providing universal service in areas currently served by non-rural telephone companies. As we determine how to calculate forward-looking economic cost, or as states do so in state-conducted cost studies, we necessarily will examine the forward-looking economic cost of supporting additional residential connections or multiple connection businesses. Depending on how we determine the forward-looking economic cost of the primary residential connection, for example, there may be little incremental cost to additional residential connections. In that case, for instance, there would be no need to support additional residential connections. We will consider the forward-looking cost of supporting designated services provided to multiple-connection businesses as well. We recognize the arguments raised by the several parties that commented on this aspect of the Joint Board's recommendation, but we do not address the merits of these arguments at this time.⁽¹⁹²⁾ We intend to examine the record on this issue in our FNPRM on a forward-looking economic cost methodology.

E. Quality of Service

1. Background

97. Section 254(b)(1) states that "quality services should be available at just, reasonable and affordable rates."⁽¹⁹³⁾ The Joint Board declined to recommend that the Commission establish federal technical standards as a condition to receiving universal service support.⁽¹⁹⁴⁾ The Joint Board also declined to recommend that the Commission adopt service quality standards "beyond the basic capabilities that carriers receiving universal service support must provide."⁽¹⁹⁵⁾ The Joint Board noted that states may, on a competitively neutral basis, adopt and enforce service quality rules that further the goals of universal service.⁽¹⁹⁶⁾ The Joint Board recommended that the Commission monitor service quality, by relying, to the extent possible, on existing data in order to avoid duplication of existing state data collection efforts.⁽¹⁹⁷⁾ The Joint Board recommended that the Commission rely on service quality data submitted to the Commission by state commissions in determining whether "quality services" are available, consistent with section

254(b)(1).⁽¹⁹⁸⁾

2. Discussion

98. We concur with the Joint Board's recommendation against the establishment of federal technical standards as a condition to receiving universal service support.⁽¹⁹⁹⁾ Further, we agree with the Joint Board that the Commission should not adopt service quality standards "beyond the basic capabilities that carriers receiving universal service support must provide."⁽²⁰⁰⁾ Section 254(b)(1) establishes availability of quality services as one of the guiding principles of universal service, but, contrary to CWA's characterization of this section as a statutory requirement, section 254(b)(1) does not mandate specific measures designed to ensure service quality.⁽²⁰¹⁾ Rather, section 254(b) sets forth the statutory principles that the Joint Board considered when making its recommendations and, similarly, must guide the Commission as it implements section 254. Although we recognize service quality to be an important goal, we conclude that implementing federally-imposed service quality or technical standards for promoting universal service is not required at this time, but we may re-examine this issue in the future.

99. Based on the Joint Board's recommendation that the Commission not establish federal technical standards as a condition to receiving universal service support, we conclude that the Commission should rely upon existing data, rather than specific standards, to monitor service quality at this time.⁽²⁰²⁾ Accordingly, we reject CWA's proposal that the Commission establish federal reporting requirements.⁽²⁰³⁾ As the Joint Board concluded, several states currently have service quality reporting requirements in place for carriers serving their jurisdictions.⁽²⁰⁴⁾ We find, consistent with the Joint Board's recommendation, that imposing additional requirements at the federal level would largely duplicate states' efforts.⁽²⁰⁵⁾ In addition, imposing federal service quality reporting requirements could be overly burdensome for carriers, particularly small telecommunications providers that may lack the resources and staff needed to prepare and submit the necessary data. For this reason, we also decline to expand, solely for universal service purposes, the category of telecommunications providers required to file ARMIS service quality and infrastructure reporting data, as suggested by North Dakota PSC.⁽²⁰⁶⁾ Currently, ARMIS filing requirements apply to carriers subject to price cap regulation that collectively serve 95 percent of access lines. We will not extend ARMIS reporting requirements to all carriers because we find that additional reporting requirements would impose the greatest burdens on small telecommunications companies.⁽²⁰⁷⁾ Although we recognize service quality to be an important goal, we conclude that implementing federally-imposed service quality or technical standards for promoting universal service would be inconsistent with the 1996 Act's goal of a "pro-competitive, de-

regulatory national policy framework" because of the administrative burden on carriers resulting from the compilation and preparation of service quality reports that would be required for the Commission to assess whether carriers were meeting those standards.⁽²⁰⁸⁾ We conclude that the record before us does not demonstrate the need to do so at this time, but we may re-evaluate the need for additional service quality reporting requirements in the future.

100. As recommended by the Joint Board,⁽²⁰⁹⁾ we will rely upon service quality data provided by the states in combination with those data that the Commission already gathers from price cap carriers through existing data collection mechanisms in order to monitor service quality trends.⁽²¹⁰⁾ We concur with the Joint Board's recommendation that state commissions share with the Commission, to the extent carriers provide such data, information regarding, for example, the number and type of service quality complaints filed with state agencies.⁽²¹¹⁾ We encourage state commissions to submit to the Commission the service quality data they receive from their telecommunications carriers. We do not, however, establish the specific type of data that state commissions should submit to the Commission because imposing such requirements might hamper states' efforts to collect the data that they find to be most effective for ensuring service quality for their residents. Nor do we adopt CWA's proposal that the Commission require state commissions to impose the same quality standards on competitive LECs that are imposed upon incumbent LECs.⁽²¹²⁾ We find that state commissions, by virtue of their familiarity with the carriers serving their respective states, are best situated to determine the extent to which service quality standards should be applied in their jurisdictions. Moreover, we agree with the Joint Board's finding that, as competition in the telecommunications industry increases, consumers will select their providers based on, among other factors, the quality of service offered.⁽²¹³⁾ We agree with North Dakota PSC that providing consumers with access to publicly available data on the performance of carriers serving a particular state could promote increased service quality by permitting consumers to compare the service quality records of competing carriers.⁽²¹⁴⁾ Therefore, we encourage state commissions, to the extent they collect such information, to make service quality data readily available to the public.

101. Consistent with the Joint Board's recommendation, we conclude that states may adopt and enforce service quality rules that are competitively neutral, pursuant to section 253(b), and that are not otherwise inconsistent with rules adopted herein.⁽²¹⁵⁾ We concur with commenters that favor state implementation of carrier performance standards.⁽²¹⁶⁾ Relying on data compiled by the National Association of Regulatory Utilities Commissioners, we note that 40 states and the District of Columbia have service quality standards in place for telecommunications companies.⁽²¹⁷⁾ Because most states have established mechanisms designed to ensure service quality in their jurisdictions, we find that additional efforts undertaken at the federal level would be largely redundant. We conclude that state-imposed measures to monitor and enforce service quality

standards will help "ensure the continued quality of telecommunications services, and safeguard the rights of consumers," consistent with section 253(b).⁽²¹⁸⁾ In light of the existing state mechanisms designed to promote service quality, we conclude that state commissions are the appropriate fora for resolving consumers' specific grievances regarding service quality. We may, in the future, however, address the need for federal service quality standards, in particular, with respect to states that currently do not have such standards in place. In addition, the Commission may address broader, more wide-ranging service quality issues during our ongoing monitoring of service quality trends.

102. We agree with the Joint Board's conclusion that, to the extent the Joint Board recommended, and we adopt, specific definitions of the services designated for support, these basic capabilities establish minimum levels of service that carriers must provide in order to receive support.⁽²¹⁹⁾ For example, we conclude above that voice grade access to the public switched network should occur in the frequency range between approximately 500 Hertz and 4,000 Hertz for a bandwidth of approximately 3,500 Hertz. Although not a service quality standard per se, this requirement will ensure that all consumers served by eligible carriers receive some minimum standard of service.

F. Reviewing the Definition of Universal Service

1. Background

103. Section 254(c)(2) states that "[t]he Joint Board may, from time to time, recommend to the Commission modifications in the definition of the services that are supported by Federal universal service support mechanisms."⁽²²⁰⁾ The Joint Board recommended that the Commission convene a Joint Board no later than January 1, 2001, to revisit the definition of universal service.⁽²²¹⁾ The Joint Board further recommended that the Commission base future analyses of the definition of universal service, *inter alia*, on data derived from the Commission's existing data collection mechanisms, such as those collected through ARMIS.⁽²²²⁾

2. Discussion

104. As recommended by the Joint Board, the Commission shall convene a Joint Board no later than January 1, 2001, to revisit the definition of universal service, as section 254(c)(2) anticipates.⁽²²³⁾ As the Joint Board concluded, this approach to re-examining the services to be supported strikes a reasonable balance between too frequent reviews, which could cause unnecessary expenditure of resources,

and sporadic evaluation, which may not produce a definition of universal service that is consistent with the principles enumerated in section 254(b) and does not reflect the definitional criteria of section 254(c).⁽²²⁴⁾

105. We disagree with GVNW's argument that carriers will lack incentive to invest in the infrastructure needed for services that may be designated for support in the future and, thus, may fail to qualify for support under future definitions of universal services.⁽²²⁵⁾ As discussed below in section VII, we have carefully structured the universal service support mechanisms to be "sufficient" pursuant to section 254(b)(4). As the Joint Board concluded, in future assessments of the definition of universal service, the Commission and Joint Board will consider what services have "been subscribed to by a substantial majority of residential customers" and "are being deployed in public telecommunications networks by telecommunications carriers," pursuant to section 254(c)(1).⁽²²⁶⁾ GVNW's argument ignores the element of consumer demand that guides carriers' investment decisions and the statutory criteria upon which decisions to alter the list of supported services will be based.

106. We reject People For's contention that a formal biennial review is warranted.⁽²²⁷⁾ As recommended by the Joint Board, we conclude that the Commission may institute a review at any time upon its own motion or in response to petitions by interested parties.⁽²²⁸⁾ We find that this approach to reviewing the definition of supported services permits sufficient flexibility to enable the Commission to respond to developments in the telecommunications industry. We agree with CNMI and other parties that "periodic" reviews are warranted to keep pace with technical developments as well as consumer trends.⁽²²⁹⁾ We reiterate that the Commission will convene a Joint Board no later than January 1, 2001, to revisit the definition of universal service.

107. Consistent with the Joint Board's recommendation, we do not adopt, at this time, additional reporting requirements to collect data for use in re-evaluating the definition of universal service.⁽²³⁰⁾ We recognize that complying with reporting requirements is burdensome for carriers, especially for small carriers that may lack the resources and personnel needed to compile the relevant information. In order to determine whether new services or functionalities should be included within the definition of universal service, however, we and the Joint Board will need information that will enable us to determine whether a proposed service has "been subscribed to by a substantial majority of residential customers" and "is being deployed in public telecommunications networks by telecommunications carriers" pursuant to section 254(c)(1). In addition to relying upon existing data collection mechanisms, such as ARMIS reports, the Commission will conduct any surveys or statistical analysis that may be necessary to make the evaluations required by section 254(c)(1) to change the definition of universal service.

Finally, we encourage states, to the extent they collect and monitor data relevant to assessing whether services meet the criteria set forth in section 254(c)(1), to provide such data to the Joint Board and the Commission in connection with any future re-evaluation of the definition of universal service.

FOOTNOTES

68. DTMF facilitates the transportation of signaling through the network, shortening call set-up time.

69. Enhanced 911 or "E911" service enables emergency service personnel to identify the approximate location of the party calling 911.

70. 47 U.S.C. § 254(c)(2).

71. 47 U.S.C. § 254(c)(1).

72. 47 U.S.C. § 254(c)(2).

73. Joint Explanatory Statement at 131.

74. 47 U.S.C. § 254(c)(1)(A)-(D).

75. Joint Explanatory Statement at 131.

76. 47 U.S.C. § 254(b).

77. Recommended Decision, 12 FCC Rcd at 112-115. The NPRM sought comment on whether the following services should be designated for universal service support: voice grade access to the public switched network, with the ability to place and receive calls; touch-tone; single-party service; access to emergency services, including access to 911 and E911 services; and access to operator services. NPRM at paras. 16, 18-22.

78. Recommended Decision, 12 FCC Rcd at 121.

79. Recommended Decision, 12 FCC Rcd at 122.

80. *See, e.g.*, GSA comments at 8-9; ITI comments at 2; Teleport comments at 3; United Utilities comments at 2.

81. Recommended Decision, 12 FCC Rcd at 112.

82. Recommended Decision, 12 FCC Rcd at 112.

83. Recommended Decision, 12 FCC Rcd at 112.
84. Recommended Decision, 12 FCC Rcd at 112.
85. Recommended Decision, 12 FCC Rcd at 112.
86. Recommended Decision, 12 FCC Rcd at 112.
87. Recommended Decision, 12 FCC Rcd at 113.
88. Consistent with the Joint Board's recommendation, we explicitly do not include call waiting, which is a discretionary service, within this definition.
89. Recommended Decision, 12 FCC Rcd at 113.
90. *See, e.g.*, GSA comments at 8-9; ITI comments at 2; Teleport comments at 3; United Utilities comments at 2.
91. Bar of New York comments at 9-10; MFS comments at 5-11.
92. Bar of New York comments at 9-10. *See also* MFS comments at 5-11 (recommending that universal service support mechanisms should support data transmissions of at least 1 Mbps).
93. Pursuant to section 254(c)(3), the Commission may designate for support additional telecommunications services not included in the "core" services designated under section 254(c)(1) for schools, libraries, and health care providers. *See infra* sections X and XI for a discussion of services that we have designated for eligible schools, libraries, and health care providers may take at a discount and for which the carrier providing those services may receive compensation equal to that discount from universal service support mechanisms.
94. For example, recent data demonstrate that only .06 percent of residential connections are digital access lines, which are defined for purposes of the Commission's Automated Reporting and Management Information System ("ARMIS") as lines with capabilities of "64 Kpbs or 56 Kpbs or ISDN B channels or other equivalent communications channels." *ARMIS Operating Data Reports*, FCC Report 43-08 (rel. April 1, 1997) (as filed by reporting local exchange carriers).
95. *See infra* section IV (discussing Joint Board's recommendation that the Commission convene a Federal-State Joint Board to review the definition of universal service on or before January 1, 2001).
96. Recommended Decision, 12 FCC Rcd at 113.

97. Recommended Decision, 12 FCC Rcd at 113.
98. Recommended Decision, 12 FCC Rcd at 113. *See also* Ohio PUC reply comments at 2 (support for local usage is essential to make access to network truly beneficial for consumers).
99. Recommended Decision, 12 FCC Rcd at 113.
100. *See, e.g.*, Ameritech comments at 5 (states should support local usage through their own universal service mechanisms).
101. Ohio PUC reply comments at 2.
102. *See infra* section VII.D.
103. *See infra* section VII.C.
104. *See* Recommended Decision, 12 FCC Rcd at 266. *See also infra* section VII.
105. *See* Recommended Decision, 12 FCC Rcd at 114.
106. Hereafter, we refer to both DTMF signaling and its functional equivalent, digital signaling, as "DTMF signaling."
107. *See* Recommended Decision, 12 FCC Rcd at 114.
108. *See* Recommended Decision, 12 FCC Rcd at 114.
109. Recommended Decision, 12 FCC Rcd at 114; NENA comments at 1.
110. Recommended Decision, 12 FCC Rcd at 114.
111. As the Joint Board recognized, cellular, broadband Personal Communications Service (PCS), and certain Specialized Mobile Radio (SMR) carriers are currently in a transition period during which they are making the technical upgrades needed to offer access to E911. Recommended Decision, 12 FCC Rcd at 114. These carriers need to complete the upgrades necessary to provide all of the E911 services specified in the Commission's Report and Order by 2001. It is significant, however, that a wireless carrier's obligation to provide such E911 services applies only if (1) a locality has implemented E911 service, i.e., if a public safety answering point (PSAP) capable of receiving and utilizing the data elements associated with the E911 services has requested that the carrier provide E911 service and (2) if a mechanism for the recovery of costs relating to the provision of such services is in place. Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, *Report and Order and Further Notice of Proposed*

Rulemaking, FCC 96-264 (rel. July 26, 1996), recon. pending (*Wireless E911 Decision*).

112. *Wireless E911 Decision* at paras. 63-66.

113. ALI is a requirement under which "covered carriers must achieve the capability to identify the latitude and longitude of a mobile unit making a 911 call, within a radius of no more than 125 meters in 67 percent of all cases." *Wireless E911 Decision* at para. 71.

114. *Wireless E911 Decision* at para. 63, 68.

115. *Wireless E911 Decision* at para. 68.

116. As set forth below, we adopt a procedure that permits otherwise eligible carriers seeking universal service support to receive a grant of additional time for complying with our general requirement that eligible carriers provide access to E911, when the relevant locality has implemented E911 service, in order to receive universal service support. *See* discussion below in section IV.C.2 addressing feasibility issues associated with providing access to 911 and E911 services.

117. *Wireless E911 Decision* at para. 89.

118. Recommended Decision, 12 FCC Rcd at 114.

119. Recommended Decision, 12 FCC Rcd at 114. *See also* Ameritech NPRM comments at 7 (support should be provided for transmission facility that connects subscriber to location manned by public safety personnel but not for underlying service because local taxes generally support underlying service).

120. 47 U.S.C. § 254(c)(1).

121. Recommended Decision, 12 FCC Rcd at 115.

122. Recommended Decision, 12 FCC Rcd at 115.

123. *Local Competition Second Report and Order* at paras. 13, 110. We explicitly do not, however, include busy line verification and emergency interrupt within the definition of operator services for universal service purposes because the record does not support including these functions. *Cf. Local Competition Second Report and Order* at para. 111 (concluding that busy line verification and emergency interrupt are forms of operator services).

124. CWA reply comments at 4.

125. Recommended Decision, 12 FCC Rcd at 121-122.

126. For an interexchange call, the IXC rather than the end user currently pays for switching costs. To the extent that, under the access charge rate structure rules we adopt today, the end user may pay for a portion of the costs of line ports used to connect the loop to the local switch, which is used to access the IXC's network, that portion will be supported by universal service support mechanisms. *See Access Charge Reform Order* at section III.B.

127. Recommended Decision, 12 FCC Rcd at 122.

128. Recommended Decision, 12 FCC Rcd at 122.

129. GCI reply comments at 10-11.

130. *See* 47 U.S.C. § 254(k).

131. Recommended Decision, 12 FCC Rcd at 122.

132. Section 332(c)(8) states that CMRS providers shall not be "required to provide equal access to common carriers for the provision of toll service." 47 U.S.C. § 332(c)(8).

133. *See infra* section IV.

134. The term "dialing parity" means "that a person that is not an affiliate of a local exchange carrier is able to provide telecommunications services in such a manner that customers have the ability to route automatically, without the use of any access code, their telecommunications to the telecommunications services provider of the customer's designation from among two or more telecommunications services providers (including such local exchange carrier)." 47 U.S.C. § 153(15).

135. *See Local Competition Second Report and Order* at para. 29. Pursuant to section 3(26), the term "local exchange carrier . . . does not include a person insofar as such person is engaged in the provision of a commercial mobile service under section 332(c), except to the extent that the Commission finds that such service should be included in the definition of such term." In adopting rules to implement the dialing parity obligations of section 251(b)(3), the Commission expressly concluded that, for purposes of that section, CMRS providers are not LECs. *Local Competition Second Report and Order* at para. 29. Under section 332(c)(8), if, in the future, the Commission determines that CMRS providers should be treated as LECs, it may then "prescribe regulations to afford subscribers unblocked access to the provider of telephone toll services of the subscriber's choice through the use of a carrier identification code assigned to such provider or other mechanism" if the Commission determines that "subscribers to [commercial

mobile services] are denied access to the provider of telephone toll services of the subscriber's choice, and that such denial is contrary to the public interest, convenience, and necessity."

136. Recommended Decision, 12 FCC Rcd at 101.

137. 47 U.S.C. § 332(c)(8).

138. *Local Competition Second Report and Order* at para. 29.

139. *See* Joint Explanatory Statement at 113 ("to provide for a pro-competitive, de-regulatory national policy framework").

140. Recommended Decision, 12 FCC Rcd at 122.

141. Recommended Decision, 12 FCC Rcd at 122-23.

142. A white pages directory is a compilation of the individual white pages listings.

143. *See* 47 U.S.C. § 153(46).

144. West Virginia Consumer Advocate comments at 2. *See also* Ohio PUC comments at 5; CWA reply comments at 4.

145. Recommended Decision, 12 FCC Rcd at 122.

146. In addition, we note that section 271(c)(2)(B)(viii) requires that BOCs, prior to providing interLATA service, provide white pages directory listings for customers of competing carriers' telephone exchange service. 47 U.S.C. § 271(c)(2)(B)(viii).

147. Recommended Decision, 12 FCC Rcd at 285.

148. Recommended Decision, 12 FCC Rcd at 286. *See infra* section VIII.

149. *See infra* section VIII for a discussion of the increased penetration rates in areas in which Lifeline and Link Up programs are available for low-income consumers.

150. *See* 47 U.S.C. § 254(c)(1).

151. Recommended Decision, 12 FCC Rcd at 323. Internet access consists of both a network transmission component and an information service component.

152. Recommended Decision, 12 FCC Rcd at 123.

153. *See infra* section X for a discussion of information services.

154. Based on recent surveys, we estimate that approximately 6 percent of all residential Internet subscribers have access faster than dial-up access. *See* "US On-Line Population Reaches 47 Million - Intelliquiest Survey Results," Internet IT Informer, February 2, 1997 (concluding that 22.3 million people in the United States primarily access the Internet from home); "Commercial Internet Exchange Internet Service Provider Study," March 1997, submitted with Commercial Internet Exchange comments in CC Docket 96-263 (March 24, 1997) (indicating that 94 percent of residential Internet users use dial-up access, five percent use Integrated Services Digital Network (ISDN), and one percent use other, presumably higher-speed, services to access the Internet).

155. 47 U.S.C. § 254(c)(1)(A) (emphasis added).

156. Recommended Decision, 12 FCC Rcd at 123.

157. *See infra* section X.

158. Recommended Decision, 12 FCC Rcd at 123.

159. We address the proposal of Catholic Conference with respect to supporting voice messaging services for individuals without residences in section VIII in our discussion of support for low-income consumers.

160. *See supra* section III.

161. Benton comments at 2.

162. Benton comments at 2.

163. Recommended Decision, 12 FCC Rcd at 115.

164. GTE comments at 16. *See also* Ameritech comments at 9 n.15; TCA comments at 3-4.

165. 47 U.S.C. § 214(e).

166. *See, e.g.*, CTIA comments at 9.

167. Recommended Decision, 12 FCC Rcd at 128.

168. 47 U.S.C. § 214(e)(1)(A).

169. Recommended Decision, 12 FCC Rcd at 128.

170. Recommended Decision, 12 FCC Rcd at 129.
171. Recommended Decision, 12 FCC Rcd at 130.
172. Recommended Decision, 12 FCC Rcd at 130.
173. Recommended Decision, 12 FCC Rcd at 128.
174. Recommended Decision, 12 FCC Rcd at 129, 130.
175. Recommended Decision, 12 FCC Rcd at 129.
176. Recommended Decision, 12 FCC Rcd at 130.
177. Recommended Decision, 12 FCC Rcd at 114.
178. In fact, in the wireless context, we made the wireless carriers' obligation to provide E911 service contingent on (1) a request from a PSAP that is capable of receiving and utilizing the data elements associated with the services; and (2) the establishment of a cost recovery mechanism. *Wireless E911 Decision* at para. 11.
179. *See Wireless E911 Decision.*
180. Recommended Decision, 12 FCC Rcd at 112, 129.
181. GTE comments at 84 n.124.
182. 47 U.S.C. § 254(b)(3).
183. Recommended Decision, 12 FCC Rcd at 132. Consistent with the principle of competitive neutrality, the Joint Board referred to "connections" rather than "lines."
184. Recommended Decision, 12 FCC Rcd at 133 (*citing* MTS and WATS Market Structure, *Memorandum Opinion and Order*, 101 FCC 2d 1222 (1985)).
185. Recommended Decision, 12 FCC Rcd at 132.
186. Recommended Decision, 12 FCC Rcd at 133.
187. Recommended Decision, 12 FCC Rcd at 133.
188. Recommended Decision, 12 FCC Rcd at 132-134.
189. Recommended Decision, 12 FCC Rcd at 133.

190. State High Cost Report at 3.

191. The Commission may, however, implement the Joint Board's recommendation to differentiate between connections for purposes other than assigning universal service support. *See infra* section XII.

192. *See, e.g.*, Ameritech comments at 6 (additional residential connections should not be supported); Letter from Mark Sievers, MFS, to William F. Caton dated February 27, 1997 (universal service administrator should use nine-digit zip codes to identify subscribers with multiple connections and assign support); California SBA comments at 10 (all residential connections should be supported); APT comments at 5 (eligible carriers should receive support for providing service to primary residences); GTE comments at 79-81 (connections to all residences should be supported); Ameritech comments at 7 (no businesses connections should be supported); SBA comments at 18 (eliminating support for multiple-connection businesses would harm rural economies).

193. 47 U.S.C. § 254(b)(1).

194. Recommended Decision, 12 FCC Rcd at 140.

195. Recommended Decision, 12 FCC Rcd at 140.

196. Recommended Decision, 12 FCC Rcd at 140.

197. Recommended Decision, 12 FCC Rcd at 140.

198. Recommended Decision, 12 FCC Rcd at 140.

199. Recommended Decision, 12 FCC Rcd at 140.

200. Recommended Decision, 12 FCC Rcd at 140.

201. CWA comments at 5.

202. *See* Recommended Decision, 12 FCC Rcd at 140.

203. CWA reply comments at 6.

204. Recommended Decision, 12 FCC Rcd at 140 (*citing* National Regulatory Research Institute, *Telecommunications Service Quality* (March 1996) (indicating that 32 state regulatory commissions and the District of Columbia have instituted quality of service standards since the AT&T divestiture.)). *See also* NARUC Compilation of Utility Regulatory Policy 1994-1995 at Table 159 (showing that 36 states require periodic telephone service quality reporting).

205. Recommended Decision, 12 FCC Rcd at 140.
206. North Dakota PSC comments at 2.
207. The Commission has recently reduced the number of filing requirements imposed on carriers. *See* Revision of Filing Requirements, *Report and Order*, CC Docket No. 96-23, FCC 96-1873 (rel. November 13, 1996), *Erratum*, CC Docket No. 96-23, FCC 96-2207 (rel. December 31, 1996) (eliminating 18 information reporting requirements imposed on common carriers).
208. Joint Explanatory Statement at 113.
209. Recommended Decision, 12 FCC Rcd at 140.
210. For example, the Commission receives service quality data by carriers that submit ARMIS 43-05 and ARMIS 43-06 reports.
211. Recommended Decision, 12 FCC Rcd at 140.
212. CWA reply comments at 7-8.
213. Recommended Decision, 12 FCC Rcd at 141.
214. North Dakota PSC comments at 1.
215. Recommended Decision, 12 FCC Rcd at 140. Section 253(b) reads: "Nothing in this section affects the authority of a State to impose, on a competitively neutral basis and consistent with section 254, requirements necessary to preserve and advance universal service, protect the public safety and welfare, ensure the continued quality of telecommunications services, and safeguard the rights of consumers."
216. *See, e.g.*, California DCA comments at 19; Maryland PSC comments at 8; Ohio PUC comments at 6; WorldCom comments at 11.
217. NARUC Compilation of Utility Regulatory Policy 1994-1995 at Table 157.
218. 47 U.S.C. § 253(b).
219. Recommended Decision, 12 FCC Rcd at 140.
220. 47 U.S.C. § 254(c)(2).
221. Recommended Decision, 12 FCC Rcd at 143.
222. Recommended Decision, 12 FCC Rcd at 143.

223. Recommended Decision, 12 FCC Rcd at 143.

224. Recommended Decision, 12 FCC Rcd at 143.

225. GVNW comments at 5.

226. Recommended Decision, 12 FCC Rcd at 143.

227. People For comments at 7.

228. Recommended Decision, 12 FCC Rcd at 143.

229. CNMI comments at 37. *See also* GVNW comments at 5; NetAction comments at 4; Ohio PUC comments at 6.

230. *See* Recommended Decision, 12 FCC Rcd at 143.

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