Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
A National Broadband Plan for our Future	)	GN Docket No. 09-51
	)	

To: The Commission

COMMENTS OF MOBILE FUTURE

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SUMMARY

In crafting its National Broadband Plan, the Commission must recognize the crucial role that wireless technologies are playing, and will continue to play, in achieving national broadband goals. Just as the Internet revolution is fundamentally changing the way that Americans communicate, do business, entertain themselves, and stay healthy and safe, the mobile revolution has had a comparable transformative effect. We are currently in the midst of the intersection of these two revolutions – and consumers are just starting to benefit from the new opportunities that mobile, Internet-based applications will bring. As we are just beginning to see, mobile broadband technology can help us achieve all of the critical broadband goals, including advancing consumer welfare, civic participation, public safety and homeland security, community development, health care delivery, energy independence and efficiency, education, worker training, private sector investment, entrepreneurial activity, and job creation and economic growth. Thus, the National Broadband Plan must acknowledge and cultivate the mobile Internet.

One way for it to do so is to take mobility into account in defining the terms "broadband" and "access to broadband" in the National Broadband Plan. The definitions of these terms must capture the specific needs of particular cases, and the fact that some applications can only be provided on a mobile basis. Similarly, the National Broadband Plan should acknowledge that reasonable network management has an important role in ensuring that consumers have a positive Internet experience – especially in the mobile context. Thus, network management will be just as important as network openness in ensuring broadband access by all Americans.

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COMMENTS OF MOBILE FUTURE

Mobile Future presents the following comments in the above-captioned proceeding to develop a National Broadband Plan.[1] Mobile Future is a broad-based coalition of businesses, non-profit organizations and individuals interested in and dedicated to advocating for an environment in which innovations in wireless technology and services are enabled and encouraged.[2] Our mission is to educate the public and key decision makers on innovations in the wireless industry that have transformed the way Americans work and play and to advocate continued investment in wireless technologies.

As discussed in more detail below, Mobile Future urges the Commission to recognize, in its broadband planning process, the important role that wireless technologies are playing, and will continue to play, in achieving national broadband goals. Among other things, the Commission should acknowledge the important role of wireless as it develops its definitions of "broadband" and "access to broadband" and as it considers the appropriate role of provider management of broadband networks.

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[1] *A National Broadband Plan for Our Future,* GN Docket No. 09-51, Notice of Inquiry, FCC 09-31 (rel. April 8, 2009) ("NOI").

[2] *See* www.mobilefuture.org.

Mobile Future applauds the Commission for commencing this proceeding and for its commitment to bringing to every American this "technology that intersects with just about every great challenge facing our nation."[3] As the Commission acknowledges, broadband technology is "fundamentally changing not only the way Americans communicate and work, but how they are educated and entertained, and care for themselves and each other."[4] The power of broadband – and particularly mobile broadband – to enrich the lives of individuals, create and deepen communities, improve public health and safety, and create new economic opportunities is unprecedented. The level of private investment in broadband technology has been and continues to be staggering, and high-quality broadband is already available to the vast majority of Americans.[5] Still, there remain pockets of the country that lack the benefits these new technologies bring – either because no broadband infrastructure exists or because individuals or businesses are unable or unwilling to avail themselves of it. It is thus important that the Commission undertake this proceeding to establish a coherent plan to ensure that everyone benefits from the broadband revolution.

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[3] NOI at ¶ 1. *See also id.* at ¶ 5.

[4] NOI at ¶ 4.

[5] *See, e.g., High-Speed Services for Internet Access: Status as of December 30, 2007*, Industry Analysis and Technology Division, WTB (January 2009) at 1 ("The presence of high-speed service subscribers was reported in all 50 states, the District of Columbia, American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and the Virgin Islands, and in nearly 100% of the Zip Codes in the United States.").

I. WIRELESS TECHNOLOGIES ARE AN IMPORTANT PART OF ACHIEVING AMERICA'S BROADBAND GOALS

A. The mobility revolution has already fundamentally changed Americans' lives

In the past decade, two technological revolutions have swept the United States and the world. The growth of broadband capabilities is one of these, but equally important is the mobility revolution, which has profoundly changed the way Americans communicate in their professional and personal lives. People now expect to be able to reach out from wherever they are and connect with their family members, friends, and business contacts wherever those people may be.

This ability to connect on a mobile basis has improved American life in myriad ways. It has profoundly increased public safety by allowing individuals to call for help whenever and wherever they need it – whether it is on a country road or an urban street corner. Data indicate that one third to one half of all 911 calls are placed from wireless phones.[6]

It also has made us more productive and prosperous. Mobile technology allows us to conduct business on the go, and potentially even to bring our offices with us wherever we go. The Commission's own data show that 86% of Americans had mobile phones by 2007,[7] and data from the Pew Internet Project show that the majority of people identified their mobile phones as the technological device or service they would be *least* willing to give up, more than television,

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[6] National Emergency Number Association, "9-1-1 Statistics," available at www.nena.org/911-statistics.

[7] *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Radio Services,* WT Docket No. 08-27, Thirteenth Report, DA 09-54 (rel. Jan. 16, 2009) *("Thirteenth CMRS Competition Report")* at ¶ 197.

the Internet, wireline telephones, or other devices.[8] Leading these shifts are Hispanics and young adults, the two demographic groups that indicate they are most attached to their mobile phones.[9] Latinos also reported using more functions on their cell phones than other groups.[10]

The popularity of mobility is not difficult to understand given its ability to empower and lift diverse American communities. Research has demonstrated that the mobile phone is "a huge boon to an individual's economic productivity and earning power."[11] Interestingly, *prepaid* wireless users – who are typically lower-income and more likely to be self-employed – are almost twice as likely to credit their mobile phones with increasing their earning power.[12] Adding to the integral role that mobile services have come to play in the American economy, wireless carriers directly employed over 260,000 people in 2007,[13] and generated countless more jobs in related areas such as designing and manufacturing handsets, network equipment and innovative mobile applications.

B. The availability of Internet-based mobile applications is just beginning to revolutionize mobile capabilities

During roughly the same time period that the mobile revolution has transformed the way Americans live, another technological tidal wave has washed across the country with equally

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[8] *Info on the Go: Mobile Access to Data and Information*, Pew Internet and the American Life Project (March 5, 2008), available at http://pewresearch.org/pubs/753/mobile-access-data-information.

[9] *Id.*

[10] *Id. See also* Ryan Kim, "Cell Phone Firms' Dream Demographic: Latinos," San Francisco Chronicle (May 4, 2008), available at http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2008/05/04/BULL10CIL1.DTL.

[11] Nicholas P. Sullivan, New Millennium Research, *Cell Phones Provide Significant Economic Gains for Low-Income American Households: A Review of Literature and Data from Two New Surveys* (April 2008) at 24, available at http://newmillenniumresearch.org/archive/Sullivan_Report_032608.pdf.

[12] *Id.* at 20.

[13] *Thirteenth CMRS Competition Report* at Tbl. A-1.

powerful effects, and that is the power of broadband Internet access. As Acting Chairman Copps recently noted in his *Rural Broadband Strategy Report* to Congress, the Internet is now a fundamental part of life for Americans to research school projects, submit college applications, connect socially and commercially, and improve public safety officers' ability to do their jobs.[14]

While the mobile revolution and the Internet revolution began as distinct phenomena, in recent years they have converged. Today, Internet-based capabilities are increasingly available on a mobile basis, increasing the transformative and beneficial qualities of both. The rise of mobile applications is increasing the utility of mobile technology, and enabling new mobile capabilities.

On the consumer front, the most obvious example is the explosive growth of iPhone "apps," which allow consumers to harness the power of the Internet to do a vast array of useful tasks in a mobile environment, such as locating each other or specific businesses; identifying the safest route to walk home at night; or identifying a song that is playing on the radio.[15] Another example is the Amazon Kindle, which allows consumers to download reading material including books, magazines, and newspapers via a built-in wireless connection.[16] As the latest version of the Kindle was released, Amazon and newspaper publishers teamed up in an effort to use the convenience of this wireless device to try to revitalize the struggling newspaper industry.[17]

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[14] *Bringing Broadband to Rural America: Report on a Rural Broadband Strategy*, FCC Acting Chairman Copps (May 22, 2009) ("*Rural Broadband Strategy Report*") at 3.

[15] As of this writing, there are over 35,000 iPhone apps available. *See* www.apple.com/iphone/appstore. In just the first 9 months that they were available, consumers downloaded over one billion apps. *See* www.apple.com/itunes/billion-app-countdown/.

[16] *See* www.amazon.com/kindle.

[17] *See, e.g.,* "Amazon's Kindle Has a Big Job: Saving the Newspaper Industry," *Los Angeles Times*, May 7, 2009, available at www.latimes.com/business/la-fi-kindle7-2009may07,0,978335.story.

On the business front, mobile Internet-based technology has allowed a wide variety of providers to offer enterprise "road warrior" applications that effectively allow employees to take their offices – including their computer network connection and office telephone extension – with them wherever they go. And over 3.1 million American consumers in 2008 conducted their banking online from their mobile devices.[18]

The incredible growth in consumer and business mobile Internet-based applications and usage is amply demonstrated in Commission's data showing that, since 2005, the number of both high-speed (over 200 kbps in at least one direction) and advanced service (over 200 kbps in both directions) connections provided by wireless carriers has grown faster than the number of connections on any other technology platform, with subscriber counts more than *doubling* in *each* of the last five *six-month* periods.[19] By the end of 2007, mobile wireless carriers provisioned more than 15 million advanced-service connections – more than 60% as many as DSL.[20]

As the Internet goes mobile, it is shaping our lives in countless new ways. This process is now well under way, but it is still a recent phenomenon. The Commission must ensure that its National Broadband Plan adequately accounts for, and takes advantage of, the profound power of the mobile Internet to improve American life.

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[18] "Branching Out: Mobile Banking Finds New Users," Wall Street Journal (Feb. 3, 2009), available at http://online.wsj.com/article/SB123362222507641723.html.
[19] *High-Speed Services for Internet Access: Status as of December 30, 2007*, Industry Analysis and Technology Division, WTB (January 2009) at tbls.1-2.
[20] *Id.* at tbl. 2.

C. Mobile technology and applications are crucial for achieving the goals of the National Broadband Plan

As the NOI notes, the Commission's National Broadband Plan must account for the use of broadband technology and services to advance a list of twelve specific public policy goals: advancing consumer welfare, civic participation, public safety and homeland security, community development, health care delivery, energy independence and efficiency, education, worker training, private sector investment, entrepreneurial activity, and job creation and economic growth.[21] Mobile broadband technologies will unquestionably play a central role in the achievement of these goals; thus, the Commission must scrupulously incorporate mobile broadband in the National Broadband Plan.

Advancing consumer welfare. The previous sections of these comments describe how mobility in general – and mobile broadband in particular – are rapidly advancing consumer welfare.[22] Moreover, one study estimated a total consumer surplus in the mobile communications industry of $157 billion in 2004;[23] it is certain to be much greater today.

Civic participation. Mobile technologies are rapidly increasing citizens' ability to communicate with their elected leaders, express their political will, and otherwise participate in the political process. Then-candidate Barack Obama's announcement of his running mate via text message was a high-profile example of the use of mobile technology in politics, but its use has been growing steadily for several years. Most organized political groups now encourage

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[21] NOI at ¶ 63, citing Recovery Act § 6001(k)(2)(D).

[22] *See supra* Sections I.A. and I.B.

[23] Sullivan, *supra* note 11, at 18. Consumer surplus is an economic measure of the extent to which consumers pay less for a product than they are willing to pay for that product. *See id.* The same study found that producer surplus in the sector was only $10.3 billion, which means that 94% of the total surplus went to consumers. *Id.*

their members to sign up for updates and action alerts via their mobile devices. The Internet's prominence in politics today is well-recognized; as consumers rely increasingly on mobile devices to access Internet content,[24] the importance of mobile broadband in the political process will only increase. Indeed, it appears that mobile technology has the power to enable direct, large-scale political action in unprecedented ways.[25]

Public safety and homeland security. The confluence of the mobile and Internet revolutions is fundamentally re-shaping public safety and homeland security. To this end, the Commission is working with other government agencies and stakeholders to ensure that a nationwide interoperable public safety mobile broadband network is available as soon as practicable.[26] Even today, however, before that goal is reached, mobile broadband is allowing police cars to become more like mobile police stations, with computers connected to their own dispatch centers and national and international crime-fighting databases and, in some cases, video cameras recording and transmitting events in and near the cars. Mobile emergency medical technology allows vital medical data gleaned by paramedics to be transmitted from the ambulance to the hospital so that the appropriate medical interventions can be ready when the patient arrives. All of these capabilities are fundamentally mobile in nature, and must be central to the National Broadband Plan.

Community development. In the same way that civic and political groups are using mobile broadband technologies to connect with constituents and supporters, as discussed above, non-profit community development groups are doing the same. In addition, and perhaps most

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[24] *See supra* notes 15-17 and associated text.
[25] The emergence in recent years of "flash mobs" generated for political purposes on mobile social networking sites is but one example.
[26] *See generally* NOI at ¶ 77.

fundamentally, mobile broadband technologies' profound ability to create and improve economic opportunities are a powerful driver of community development.[27]

Health care delivery. There are certain medical broadband technologies that can only be provided on a mobile basis, and the national broadband plan must take this into account. Applications to transmit medical data from ambulances to hospitals, discussed above, are just one example. Mobile broadband technology also will facilitate the availability of improved medical care in rural areas that lack medical facilities and personnel through the use of mobile medical and diagnostic facilities, such as mobile mammography clinics. Finally, mobile health monitoring devices for chronic conditions including heart conditions and diabetes have a tremendous potential to help minimize healthcare costs by allowing patients to receive virtually the same medical support while leading their every day lives without hospital confinement. For all these reasons, mobile broadband is necessary for the achievement of the nation's health care goals.

Energy independence and efficiency. As the NOI acknowledges, broadband technologies can bring substantial energy savings through telework, and mobile broadband is crucial for this capability. While some telecommuters can use fixed broadband connections, more mobile workers must rely on mobile broadband capabilities. Indeed, some companies and organizations with large mobile workforces have eliminated fixed internal networks altogether, and rely entirely on a virtual private network created over commercial mobile broadband networks.[28] In

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[27] *See supra* Sections I.A. and I.B.

[28] *See, e.g.,* www.wireless.att.com/businesscenter/business-programs/small/networks.jsp#BCN?WT.svl=calltoaction&wtLinkName=LearnMore&wtLinkLoc=BDY.

planning for the future, the Commission must account for the increasing importance of mobile broadband in telework, which in turn is a key to increasing energy efficiency.

Education. No demographic group has integrated mobile technology into their lives as effectively as young people, who are also overwhelmingly students. From elementary school through college, our students are already using mobile technology extensively to obtain information from the Internet and each other. Our educational system has only begun to harness the power of mobile devices generally, and mobile Internet devices in particular, to improve the educational system. Because robust mobile broadband capabilities are certain to be central to future efforts to improve the educational process, they should be emphasized in the National Broadband Plan.

Worker training. As the NOI observes, the Internet creates possibilities for worker training – particularly through distance learning – that would have been inconceivable a decade ago. Because mobile Internet devices are generally much more affordable than the full-fledged computers that are generally necessary to access the Internet via a fixed connection, they are already becoming the device of choice for lower-income consumers – who often stand to benefit most from worker training. For this reason, mobile broadband capabilities will be an important element for incorporating worker training into the National Broadband Plan.

Entrepreneurial activity. While creativity abounds in the Internet space generally, the development of mobile broadband applications is a current hotbed of entrepreneurial activity. As described above, the market is just beginning to explore all the ways that consumers' lives can be improved by tying together mobility and the Internet in innovative ways.[29] The development of

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[29] *See supra* section I.B.

35,000 new iPhone apps – over one billion of which have been sold to consumers – in less than a year is just one example of the explosive potential for innovation in the mobile broadband space.[30] Given the nascent character of this technology and its enormous untapped potential, it is difficult to imagine a better way to cultivate American entrepreneurial activity than by fostering robust mobile broadband networks through the National Broadband Plan.

Job creation and economic growth. As discussed above, mobile technologies are powerful engines of economic growth. Mobile providers directly employ over a quarter of a million American workers, and adjunct industries like handsets and network equipment and applications developers employ many thousands more.[31] Mobile capabilities also create economic opportunities for the individuals and organizations that use them, stimulating enormous economic activity in the process.[32] By fostering mobile broadband infrastructure, the Commission can ensure that its National Broadband plan promotes job creation and economic growth.

In sum, mobile broadband capabilities will be central to achieving all of the public policy goals set out for the Commission to consider in crafting its National Broadband Plan. Mobile Future looks forward to working with the Commission on the appropriate incorporation of mobile broadband into the National Broadband Plan.

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[30] *See supra* note 15 and associated text.
[31] *See supra* note 13.
[32] *See supra* Sections I.A. and I.B.

II. IN DEFINING BROADBAND AND BROADBAND ACCESS, THE COMMISSION MUST ACCOUNT FOR THE SPECIFIC TECHNOLOGICAL NEEDS OF DIFFERENT APPLICATIONS AND SITUATIONS

As the Commission rightfully acknowledges, the term *broadband* "can be defined in myriad ways."[33] The concept of having *access* to broadband is similarly elastic.[34] Yet the Commission must develop a working understanding of both terms in order to produce a meaningful National Broadband Plan.[35] In doing so, Mobile Future urges the Commission to consider the distinct needs of particular applications and situations and the role of mobility in particular cases.

In part, this approach to the definitional process will require the Commission to embrace an "'experiential' metric based on the consumer's ability to access sufficiently robust data for certain identifiable broadband services."[36] At the same time, however, the capabilities expected of the service must take account consumers' actual expectations and needs. As these comments abundantly show, the availability of *mobile* broadband capability will be essential for the achievement of national broadband objectives.[37]

In defining "broadband" and "access to broadband," then, the Commission must take into account that certain applications and situations will best be served by mobile broadband technology. Indeed, some can *only* be served by mobile broadband technology. These comments discuss a wide variety of crucial broadband applications that can only be provided on

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[33] NOI at ¶ 15.
[34] *See* NOI at ¶ 23.
[35] Recovery Act § 6001(k)(2).
[36] NOI at ¶ 17.
[37] *See supra* Sections I.A.-C.

a mobile basis.[38] At the same time, there may be other applications that, while equally vital, may be better served with other types of broadband technology; this is particularly true of applications requiring extremely high bandwidth, such as medical imaging applications. The definitions adopted in the Commission's broadband plan should account for these different needs across varying important broadband applications.

A definition that accounts for different technological capabilities will be necessary, but simply adopting "different definitions or standards of what constitutes broadband based on the technology being used to provide the service or the context in which the service is applied"[39] may not be enough. The definitions must explicitly account for the need for mobility in certain situations, as discussed herein. Thus, mobility must be considered as a significant factor in the definitions of both *broadband* and *access to broadband* in the National Broadband Plan.

III. MANAGED NETWORKS HAVE AN IMPORTANT ROLE, ESPECIALLY IN THE MOBILE CONTEXT

In the context of its charge to analyze "the most effective and efficient mechanisms for ensuring broadband access by all people of the United States,"[40] the Commission seeks comment on "the value of open networks for ensuring broadband access for all Americans, and specifically how the term 'open' should be defined."[41] While there is no question that consumers must have open access to the Internet in a general sense in order for the benefits of such access to be realized, there remains a need for some operational intermediation between the user and the Internet, and this is particularly true in the wireless environment.

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[38] *See supra* Sections I.B. and I.C.
[39] NOI at ¶ 19.
[40] Recovery Act § 6001(k)(2)(A). *See also* NOI at ¶ 36.
[41] NOI at ¶ 47.

The Commission has correctly acknowledged the need for reasonable network management for the protection of consumers and networks alike.[42] Network management ensures that consumers are protected from viruses, denial-of-service attacks, and similar threats, and also prevents high-volume users from denying other consumers on the same network node of reasonable access to the network.

In the mobile context, network management takes on an added sense of urgency.[43] Wireless networks today still face enhanced capacity and shared-facility constraints and wireless broadband providers would ignore them at both their own and their customers' peril. In addition, wireless broadband providers also should be at liberty to take account of the environment in which customers use mobile broadband services. Mobile broadband users are more likely to be using a smaller screen, a different navigational interface on a mobile device, and may be subject

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[42] *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities; Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services; Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements; Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities Internet Over Cable Declaratory Ruling; Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities*, Policy Statement, 20 FCC Rcd 14987-88, para. 4 (2005) ("Internet Policy Statement"). *See also Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications; Broadband Industry Practices; Petition of Free Press et al. for Declaratory Ruling that Degrading an Internet Application Violates the FCC's Internet Policy Statement and Does Not Meet an Exception for "Reasonable Network Management*," File No. EB-08-IH-1518, WC Docket No. 07-52, Memorandum Opinion and Order, 23 FCC Rcd 13028 (2008) ("Comcast Order") *pet. for review pending*, *Comcast Corporation v. FCC*, No. 08-1291 (D.C. Cir. Sept. 4, 2008); *Broadband Industry Practices*, WC Docket No. 07-52, Notice of Inquiry, 22 FCC Rcd 7894 (2007).

[43] As the Commission correctly notes in the NOI, "the extent to which the principles in the *Internet Policy Statement* apply to wireless service providers is currently before the Commission," and the NOI wisely did not prejudge the issue. NOI at n.71, citing Petition of Skype Communications S.A.R.L. to Confirm a Consumer's Right to Use Internet Communications Software and Attach Devices to Wireless Networks, RM-11361, filed February 20, 2007.

to other distractions that are more likely in a mobile environment than a fixed, stationary one. As a result, mobile broadband providers need the flexibility to manage the online user experience in ways that benefit consumers and account for all of these factors.

Thus, reasonable network management is likely to play just as important a role as network openness in ensuring broadband adoption and deployment. The National Broadband Plan should incorporate the complementary roles of openness and management – and particularly the special needs for network management in the mobile wireless broadband context.

CONCLUSION

Wireless technologies are, and will continue to be, an important part of achieving national broadband goals. The Commission's National Broadband Plan should recognize and harness the enormous power of mobile broadband to improve our collective future.

Respectfully submitted,

By: _____/s/_____

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