Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act	)	GN Docket No. 09-47
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act	)	GN Docket No. 09-137

COMMENTS OF CTIA – THE WIRELESS ASSOCIATION® ON NBP PUBLIC NOTICE #26, USES OF SPECTRUM

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I. INTRODUCTION AND SUMMARY

CTIA – The Wireless Association® ("CTIA")[1] submits these comments in response to the Public Notice issued by the Federal Communications Commission ("FCC" or "Commission") concerning alternative uses of broadcast television spectrum.[2] As CTIA has previously demonstrated, the Commission should use the National Broadband Plan to meet the

[1] CTIA-The Wireless Association® is the international organization of the wireless communications industry for both wireless carriers and manufacturers. Membership in the organization covers Commercial Mobile Radio Service ("CMRS") providers and manufacturers, including cellular Advanced Wireless Service, 700 MHz, broadband PCS, and ESMR, as well as providers and manufacturers of wireless data services and products.

[2] *Data Sought on Uses of Spectrum*– NBP Public Notice #26, GN Docket Nos. 09-47, 09-51,09-137, Public Notice, DA 09-2518 (Dec. 2, 2009).

rapidly growing spectrum needs of mobile wireless broadband consumers and should explore all options for making more efficient use of broadcast television spectrum.[3]

CTIA and many others in this record have provided extensive evidence showing that current spectrum allocations are insufficient to meet the ever-growing demand for wireless broadband service. Moreover, it is irrefutable that improvements in spectral efficiency alone will not be sufficient to meet demand. By contrast, over-the-air television broadcasters, which hold rights to spectrum that would be particularly suited to mobile broadband, are not utilizing their spectrum to its full capacity. Their current technology not only occupies the 6 MHz of spectrum that has been licensed to each station, but also requires between 6 and 12 MHz of "buffer" on either side of the channel to accommodate the interfering effect of the strong broadcast signal. As described in the joint CTIA-CEA filing concerning Section 336 of the Act, the Commission should act expeditiously to provide an evaluation to Congress on whether it is possible to reduce the amount of spectrum assigned for broadcast television use.

As an important next step in this process, CTIA has joined with the Consumer Electronics Association ("CEA") in filing a joint proposal for consideration.[4] This plan, filed today, would allow for more effective use of broadcast spectrum by reducing the amount of adjacent spectrum that is impacted by broadcasters' current technology, thereby recapturing significant amounts of spectrum for mobile wireless broadband. CTIA urges the Commission to

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[3] *See* Letter from Steve Largent, President and CEO, CTIA – The Wireless Association, and Gary Shapiro, President and CEO, Consumer Electronics Association, on behalf of Wireless Broadband Proponents, to FCC Chairman Julius Genachowski and Commissioners Michael J. Copps, Robert M. McDowell, Mignon Clyburn, and Meredith Attwell Baker, (Nov. 17, 2009) (requesting the FCC begin a proceeding to investigate potential reallocation of broadcast spectrum pursuant to Section 336(g)).

[4] *See* CTIA-CEA White Paper Proposal: Exploring A Path For Next Gen Television And Next Gen Wireless Broadband Spectrum, GN Docket No. 09-47, GN Docket No. 09-51, GN Docket No. 09-137 (filed Dec. 22, 2009).

give this proposal, which represents a substantial step forward, careful consideration as it develops its National Broadband Plan.

II. GENERAL APPROACH TO SPECTRUM ASSESSMENT: POLICYMAKERS MUST ADDRESS THE LOOMING SPECTRUM CRISIS THROUGH ADDITIONAL ALLOCATIONS OF SPECTRUM FOR MOBILE BROADBAND USE.

A. What factors should the Commission consider when examining and comparing the benefits of spectrum used for over-the-air television broadcasting and those of spectrum used for wireless broadband services?

When weighing the comparative benefits of over-the-air television and wireless broadband, the Commission must take into account that consumer demand for wireless broadband services and the spectrum required to meet that demand vastly outweigh consumer demand and spectrum needs for over-the-air television. As an initial matter, the benefits of over-the-air broadcast services can be enjoyed by virtually every American citizen without the use of over-the-air broadcast spectrum. In fact, the vast majority of Americans do so. Most members of the public receive those services through either cable or satellite services. Moreover, the number of people who use over-the-air broadcasting has decreased by 56 percent over the last ten years.[5] In contrast, wireless broadband services are not delivered in any other fashion, and demand from residential, enterprise, and institutional users has grown exponentially. Over just the last four years, the number of people using smartphones has grown 690 percent.[6]

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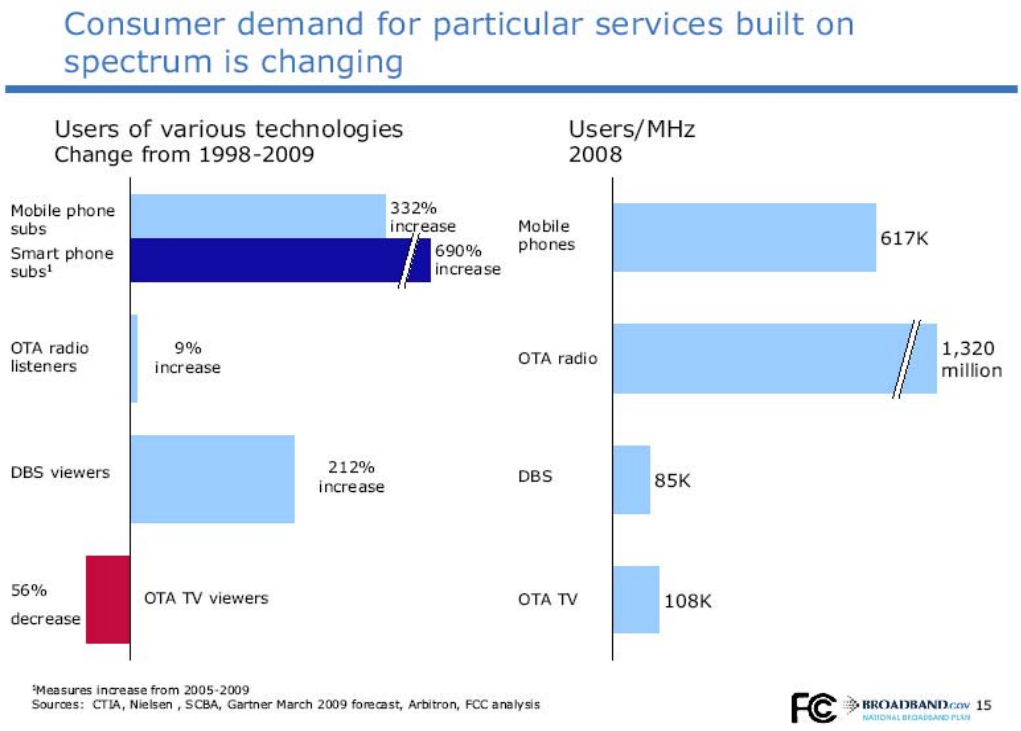
[5] Blair Levin, Let's Make a Deal, Broadcasters, Mobile Broadband, and a Market in Spectrum, The Progress & Freedom Foundation, Progress on Point, Moderated Panel Discussion Transcript at 22 (Dec. 2009), *available at* http://www.pff.org/issues-pubs/pops/2009/pop16.27-broadcasters-mobile-broadband-spectrum-auction.pdf.

[6] *Id.*



And this is just "the early innings" of mobile Internet development, which is growing faster than previous technology cycles, including the evolution of the desktop personal computer.[7] More users are expected to connect to the Internet through mobile devices than desktop computers within the next five years.[8] As shown in the November Update to the Commission, unprecedented demand for mobile data is driving the need for more spectrum to be dedicated for wireless broadband.[9]

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[7] Jeff Bertolucci, *Mobile Internet to Dominate Within 5 Years- Study***,** PC World (Dec. 17, 2009), *available at* http://www.pcworld.com/article/184876/mobile_internet_to_dominate_within_5_years_study.html (based on Morgan Stanley Study, *available at* http://www.morganstanley.com/institutional/techresearch/pdfs/MOBILEINTERNET_12_15_09_V3.pdf)

[8] *Id.*

[9] FCC Open Meeting, National Broadband Plan Presentation, Broadband Gaps, Slide 14,15 (Nov. 18, 2009), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294708A1.pdf.

B. What would be the impact to the U.S. economy if insufficient additional spectrum were made available for wireless broadband deployment, in terms of investments, jobs, consumer welfare, innovation, and other indicators of global leadership?

Mobile broadband services are critical to the success of the U.S. economy. The Commission has made clear that access to broadband – particularly mobile broadband – is the key to the economic well-being of this country. In a recent speech, Chairman Genachowski aptly noted "that mobile is a key part of the strategy for broadband. . . . Even in this difficult economic environment, smartphone sales in the U.S. have doubled in the past year. . . . at the FCC we are studying ways to accelerate the roll-out of 4G – by ensuring the availability of sufficient spectrum . . . ."[10]

As CTIA has documented in previous filings, the wireless industry is currently contributing mightily to the U.S. economy, through the massive capital investments of wireless providers, by creating high-paying, skilled jobs across the country, and with billions of dollars of direct and indirect benefits flowing from the innovative wireless services and applications consumers demand.[11] Wireless providers deliver an average yearly infusion of over $22 billion in investment in the nationwide build-out of broadband networks that are empowering consumers with high-speed Internet access wherever they live, work or travel. The wireless industry has a dramatic and positive on the economic health of our nation, thanks to the robust array of direct and indirect benefits that flow from wireless voice and broadband services. In addition, the

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[10] Prepared Remarks of Chairman Julius Genachowski, Federal Communications Commission, "ICT: Global Opportunities and Challenges," International Telecommunication Union Global Symposium for Regulators Beirut, Lebanon November 10, 2009, *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294594A1.pdf.

[11] *See* Letter from Christopher Guttman-McCabe, Vice President, Regulatory Affairs, CTIA, to Julius Genachowski, Chairman, Federal Communications Commission et al, GN Docket No. 09-51 et al. (filed July 9, 2009).

wireless industry plays an important role by creating high-paying, skilled jobs across the country. Indeed, CTIA submitted a detailed economic analysis of the wireless industry's contribution to the American economy, authored by Dr. Harold Furchtgott-Roth with a forward by Dr. Robert Atkinson.[12] That paper details the wireless industry's profound economic impact, while Dr. Atkinson aptly observes that "we have only begun to scratch the surface of the wireless revolution and its impact on economic growth, societal improvement and increased quality of life for individuals."

Despite this success, CTIA believes that there is an impending spectrum crisis that puts at risk the U.S. mobile broadband future. To meet this looming spectrum crisis, significant additional amounts spectrum must be identified and allocated between 400 MHz and 3 GHz for mobile broadband services.[13] If the Commission does not take quick action to meet this demand, wireless service providers will be unable to meet the increasing demand for data by consumers. Experts predict that mobile data and Internet traffic will increase 66 times between 2008 and 2013,[14] and by 2010, "mobile broadband penetration will surpass fixed penetration globally."[15]

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[12] *Id.* at Attachment.

[13] *See Ex Parte* Letter from Christopher Guttman-McCabe, V.P., Regulatory Affairs, CTIA – The Wireless Ass'n, to Chairman Julius Genachowski, and Commissioners Copps, McDowell, Clyburn, and Baker, Federal Communications Commission, GN Docket No. 09-51 (filed Sep. 29, 2009) ("CTIA Proposal"); *see also* Comments of MetroPCS Communications, Inc., GN Docket No. 09-51 at 5-6 (filed Oct. 23, 2009); Comments of Motorola Inc., GN Docket No. 09-51 at 3-4 (filed Sep. 29, 2009); Comments of T-Mobile USA, Inc. GN Docket No. 09-51 at 12-13 (filed Sep. 29, 2009); Comments of AT&T Inc. GN Docket No. 09-51 at 2 (filed Sep. 29, 2009); Reply Comments of Verizon Wireless, GN Docket No. 09-51 at 48 (filed Nov. 5, 2009).

[14] Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update," Cisco Systems, Inc. at 1-2 (Jan. 2009), *available at* http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.pdf.

Providers have found this data to be in line with their experiences. For example, AT&T noted that its wireless data traffic has increased nearly 5,000 percent in the past 12 quarters and other carriers have likewise reported dramatic increases.[16] Based on demand calculations from the International Telecommunications Union ("ITU"), CTIA has calculated that U.S. policymakers will need to allocate additional spectrum of at least 800 MHz for mobile wireless broadband use within the next six years, and has submitted this request to the FCC.[17]

Without additional spectrum, providers will be unable to continue to invest in mobile networks to provide the innovative services and devices that the American public has grown to expect. Providers will be unable to innovate and deliver new services for consumer welfare, including improved disabilities access to wireless devices, enhanced 911 data services and emergency alerts. As a result, the virtuous cycle that CTIA has detailed – upgraded networks lead to more and better smartphones, which leads to more robust application development, which leads to more consumption by consumers, which leads requires upgrades to networks and starts the cycle again – will be slowed. U.S. providers will also no longer be able to maintain world leadership in the delivery of novel and innovative services and devices.

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[15] Comments of 3G Americas, GN Docket No. 09-51 at 3 (filed Sep. 29, 2009) (quoting Chetan Sharma Consulting, *Managing Growth and Profits in the Yottabyte Era* 16 (2009), http://www.chetansharma.com/yottabyteera.htm).

[16] Comments of AT&T Inc. GN Docket No. 09-51 at 7 (filed Sep. 29, 2009) (citing *Ex Parte* Letter from Kathleen O'Brien Ham, T-Mobile USA, to Marlene H. Dortch, Federal Communications Commission, GN Docket No. 09-51, WT Docket No. 06-150, PS Docket No. 06-229, WT Docket No. 05-265, WT Docket No. 00-193, WC Docket No. 05-25, at 9 (filed Aug. 6, 2009) ("T-Mobile G1 customers use 50 times the data of the average T-Mobile customer"); *see also AT&T CMRS Innovation Comments*, Faulhaber & Faber Decl. at 12-13 ("*Faulhaber & Faber Declaration*").

[17] Letter from Christopher Guttman-McCabe, V.P., Regulatory Affairs, CTIA – The Wireless Ass'n, to Chairman Julius Genachowski, and Commissioners Copps, McDowell, Clyburn, and Baker, Federal Communications Commission, GN Docket No. 09-51 (filed Sep. 29, 2009) ("CTIA Proposal")

Despite overwhelming use and increasing demand, the U.S. is lagging behind other peer nations in one particular wireless broadband category – additional spectrum identified for licensed commercial use. The U.S.'s global competitors have made major national commitments to their own mobile broadband futures, while the U.S. has dedicated hundreds of megahertz *less* spectrum for commercial wireless uses. For example, the United Kingdom has more than 350 MHz currently licensed to CMRS providers, and Ofcom, the UK regulator, has identified and is in the process of reallocating an additional 355 MHz of spectrum for CMRS.[18] The result will be nearly 710 MHz, more than double the spectrum currently available to Britain's wireless broadband providers. By comparison, it means that policymakers in the UK will have allocated over 300 MHz more than what is available to U.S. wireless providers, even though that allocation will be spread across fewer providers and even though providers in the UK serve far fewer subscribers (only 76 million) than we have in the U.S. Similarly, in Germany there is 340 MHz of spectrum identified to be reallocated for CMRS, bringing the spectrum available to German wireless broadband providers to 645 MHz, over 200 MHz more than what is available in the U.S, while serving only 107 million people.[19]

CTIA believes that, just as policymakers in other peer countries have recognized the importance of bringing to market significant additional spectrum resources for mobile broadband, addressing the global spectrum imbalance must be a key priority for U.S. policymakers. To put the U.S. on par with its global counterparts, CTIA has demonstrated, along

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[18] *See* Ofcom, News Release, *A Better Digital Dividend for Britain (*Feb. 2, 2009), *available at* http://www.ofcom.org.uk/media/news/2009/02/nr_20090202; *see also* Caroline Gabriel, *UK 2.6 GHz auction pushed back again, to 2010*, 4GTrends (Jul. 1, 2009), *available at* http://4gtrends.com/?p=1143.

[19] *See* Caroline Gabriel, *Germany To Auction Massive 340 MHz of 4G Spectrum*, Rethink Wireless (May 5, 2009), *available at* http://www.rethink-wireless.com/2009/05/05/germany-auction-massive-340mhz-4g-spectrum.htm.

with commercial wireless industry commenters, that the Commission must identify at least 800 MHz of additional spectrum for licensed commercial use.

C. What would be the impact to the U.S. economy and public welfare if the coverage of free over-the-air broadcast television was diminished to accommodate a repacking of stations to recover spectrum?

As an initial matter, CTIA believes that the benefits of broadcast television services can be enjoyed by virtually every American citizen without the use of over-the-air broadcast spectrum. In fact, and as described above, the vast majority of Americans already do so. As an alternative, however, CTIA believes that the broadcast television industry can be accommodated with smaller amounts of spectrum than currently authorized. Currently, with high-power use and technology, over-the-air television broadcasting not only requires the 6 MHz channel licensed to the provider, but also requires between 6 and 12 MHz of "buffer" on either side of the channel to accommodate the interfering effect of the strong broadcast signal (approximately 1 megawatt for most large broadcast television stations).[20] Therefore, the true spectrum footprint of one DTV broadcast station can effectively be as large as 18 MHz in a market.

But despite occupying in many cases as much as 18 MHz of spectrum, over the air services provided by television broadcasters could readily be accomplished in significantly less spectrum. While initially high definition over the air video programming required the full 6 MHz of spectrum previously allotted to analog television service, the reality is that television broadcasters are relying more upon standard definition "multicast" streams. Through compression techniques and greatly improved broadcasting equipment and television receivers,

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[20] For broadcast television operators to use adjacent television channels, the broadcast transmitters must be co-located (or nearly so) to ensure that the signal strength received by televisions is equalized. Without extensive coordination among broadcast licensees to co-locate operations, first adjacent channel interference cannot be overcome. *See, e.g.*, 47 C.F.R. §73.623(d)(2) (requiring a distance of 110 kilometers between adjacent channel UHF broadcast television transmitters).

broadcast television can now accommodate many standard definition video streams within the 6 MHz of licensed television spectrum.

Therefore, only through a full and public discourse about the use of the broadcast television spectrum, and the effects of a reduction in such spectrum, can the public be assured that this spectrum is being utilized for its best and highest use. As discussed in more detail herein, CTIA believes that an evaluation of broadcast television spectrum needs has been mandated by Congress in Section 336 of the Communications Act, 47. U .S.C. § 336, and would fully serve the public interest. While the broadcast television industry does provide some public benefits – including the provision of local news – these same consumer welfare benefits are also being met through cable and satellite television and are increasingly being provided by the wireless broadband industry in a more efficient manner.

D. Consumers are migrating away from mass-market "appointment" viewing to more fragmented and time-shifted viewing. What impact will this trend have on the television broadcasting industry?

Consumer habits reflect a migration to viewing and content that is fragmented, time-shifted, on demand, and interactive. For example, an Internet research firm estimates that in July 2009 over 38 million people watched a video on Hulu.[21] Current broadcast TV services are provided as is, without interactive features, and have traditionally been without on demand capabilities. This shift in consumers' desires for content accessible anywhere and anytime more closely matches the business model adopted by the wireless broadband industry.

[21] One of the turning points in television's transition to the Internet began with the establishment of Hulu, which launched publicly March 12, 2008. It carries the programs of several networks and cable channels. *Hulu Had More Viewers Than Time Warner in July*, Broadcast Engineering, (Sep. 3, 2009), *available at* http://broadcastengineering.com/news/hulu-had-more-viewers-in-july-than-time-warner-090709/.

A wide variety of innovative applications make TV shows, movies, music and other content available on smartphones today. For example, Joost is a free iPhone application that has a library of 46,000 videos, including clips, full episodes of TV shows, and even full-length movies that users can select and watch right on their phone.[22] Flixster allow users to watch movie trailers and purchase movie tickets online.[23] And other innovative applications like Qik allow users to stream live video from their phones to friends and family — and even the world at large. Qik will even help users upload videos to YouTube.[24]

Two-way services, such as wireless broadband, are required to meet the needs of consumers desiring ever more interactive and specialized content delivery and control. While there is likely to still be some small amount of demand for traditional broadcast television services, there is little to suggest that this cannot be accommodated over cable and satellite television. Moreover, the reality is that today's consumers, as well as future consumers, demand capabilities to manage their video and Internet connectivity experience. As such, real growth in demand will continue to expand for wireless broadband services while one-way television broadcast service demand will maintain its diminishing trend.

E. Congress instructed the FCC to review broadcast spectrum for possible reallocation.

In the Telecommunications Act of 1996, Congress instructed the Commission to conduct an evaluation of the advanced television services program within 10 years after the date the

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22 *See* Liane Cassavoy, *Mobile Video: So Many Apps, So Little Time*, NewTeeVee (May 7, 2009), *available at* http://newteevee.com/2009/05/07/mobile-video-so-many-apps-so-little-time/.

23 *Id.*

24 *Id.*

Commission first issued licenses for such services.[25] Subsection (1), which requires an assessment of the willingness of consumers to purchase the television receivers necessary to receive broadcasts of advanced television services may no longer be pertinent in light of the completion of the digital transition. Subsections (2) and (3) of Section 336(g) require the Commission to conduct:

> (2) an assessment of alternative uses, including public safety use, of the spectrum used for advanced television broadcasts; and
> (3) an evaluation of the extent to which the Commission may be able to reduce the amount of spectrum assigned to advanced television broadcast licensees.[26]

As CTIA described in its joint Nov. 17, 2009 letter filed with CEA,[27] the plain language of Section 336 of the Communications Act requires that the Commission provide an evaluation to Congress on the ability of broadcast television to utilize less spectrum than originally authorized. CTIA strongly urges the Commission to study the ability of over the air television to be provided in less spectrum than is currently licensed, freeing up spectrum for wireless broadband services. To CTIA's knowledge, the Commission has never conducted a detailed evaluation of advanced television services, nor has it made an assessment of alternative uses and the ability of the Commission to reduce the amount of spectrum assigned to broadcast television licensees. This spectrum is uniquely suited for mobile broadband applications, devices and services – it has highly favorable propagation characteristics and is directly adjacent to the 700

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25 *See* Telecommunications Act of 1996, Pub. L. No. 104-104, §336(g), 110 Stat. 56 (1996) (codified at 47 U.S.C. § 336(g)).

26 *Id.*

27 *See also* Letter from Steve Largent, President and CEO, CTIA – The Wireless Association, and Gary Shapiro, President and CEO, Consumer Electronics Association, on behalf of Wireless Broadband Proponents, to FCC Chairman Julius Genachowski and Commissioners Michael J. Copps, Robert M. McDowell, Mignon Clyburn, and Meredith Attwell Baker, (Nov. 17, 2009) (requesting the FCC begin a proceeding to investigate potential reallocation of broadcast spectrum pursuant to Section 336(g)).

and 800 MHz spectrum utilized by the commercial wireless industry. CTIA therefore urges the Commission to take immediate action to initiate the Congressionally-mandated evaluation of broadcast television spectrum usage.

III. POTENTIAL APPROACHES TO INCREASE SPECTRUM AVAILABILITY AND EFFICIENCY: THE FCC SHOULD EXPLORE OPTIONS THAT PROMOTE MORE EFFICIENT TECHNOLOGY AND PERMIT REALLOCATION OF SPECTRUM FOR MOBILE BROADBAND.

CTIA believes the Commission should consider all options for freeing up large contiguous blocks of broadcast spectrum. Ultra High Frequency ("UHF") spectrum, in particular, is uniquely suited for mobile broadband services. UHF television channels 14-51 occupy the frequencies between 470 and 698 MHz. This 228 MHz of spectrum is squarely in the most valuable part of the spectrum between 400 MHz and 3 GHz that has been identified by CTIA and others as the most appropriate spectrum for mobile broadband services.[28] In fact, the Commission itself, in the context of the digital television transition, has several times referred to the broadcast spectrum as "beachfront property" that would be ideal for mobile communications services.[29] The UHF TV band has favorable propagation characteristics that allow for mobility,

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[28] *See* Comments of AT&T Inc., GN Docket No. 09-51 at 17 (filed Sep. 29, 2009); 3G Americas Comments, GN Docket No. at 7 (filed Sep. 29, 2009); MetroPCS Comments, GN Docket No. 09-51 at 7(filed Sep. 29, 2009); Comments of Motorola Inc. GN Docket No at 10 (filed Sep. 29, 2009); Comments of Verizon Wireless, GN Docket No. 09-51 at 13 (filed Sep. 29, 2009); *see also* Technical and Operational Information for Identifying Spectrum for the Terrestrial Component of Future Development of IMT-2000 and IMT-Advanced, Report ITU-R M.2079, at 6 (2006).

[29] *See* FCC Media Bureau Staff Report, Concerning Over-the-Air Broadcast Television Viewers, MB Docket No. 04-210, 2005 WL 473322 (Feb. 28, 2005) ("The 108 MHz of spectrum available because of the digital transition "is 'beachfront' spectrum, with propagation characteristics that make it ideal for providing wireless broadband access through foliage and building walls."); Statement of Commissioner Robert M. McDowell before the House Subcommittee on Telecommunications and the Internet, Committee on Energy and Commerce (Apr. 15, 2008); Frank Saxe, "Digital Age Airwaves Battle Begins: Spare Spectrum Due to Digital TV Conversions May Be Key to Expansion of Wireless Industry," Billboard (Dec. 23,

while also affording an acceptable trade-off between coverage and cost. Moreover, television broadcasting spectrum is directly adjacent to the recently auctioned 700 MHz spectrum (698-806 MHz), allowing for the potential of garnering significant contiguous blocks of spectrum for mobile broadband services.

While CTIA believes there is little evidence to suggest that consumers could not be accommodated through cable and satellite television and the rich array of services offered via mobile broadband, CTIA believes the Commission could also explore approaches that would facilitate the dual goals of creating additional spectrum for mobile broadband without impairing over-the-air television. As noted above and in previous filings, CTIA strongly believes that there should be an ability to drive more efficient use of broadcast television spectrum. Indeed, CTIA and CEA are providing a joint proposal, separately filed in this proceeding today, that describes a framework for moving towards this goal. The proposal would allow for broadcast television to undergo a change in architecture – from a single site, high power configuration to a network of low power, distributed transmitters throughout the same coverage area. For purposes of discussion, the proposal is intended to:

- Allow consumers to continue to enjoy over-the-air television including broadcast high-definition TV without disturbing consumer television sets;
- Allow television licensees to continue to have the full use of 6 MHz of spectrum and the associated 19.4 Mbps data stream;
- Allow costs of the transition to be borne by auction proceeds or auction winners, rather than broadcasters; and
- Free up sufficient spectrum, in large contiguous blocks, to justify any transitional disruptions.

2000) (quoting FCC Chairman Kennard as stating that "the broadcast community is sitting on 150 megahertz of prime beachfront property - that is a public resource that is lying fallow").

While the proposal takes no position on whether it would be in the public interest to ensure fiscal or technical neutrality for television broadcast incumbents, for purposes of constructive engagement, it nevertheless attempts to do so. CTIA offers this potential approach as one means for facilitating the continued availability of over-the-air television (indeed, with improved capabilities) while freeing considerable amounts of additional spectrum for mobile wireless broadband uses. CTIA believes that this plan has the potential, after constructive debate and public discussion, to meet all of those objectives and potentially more.

IV. BROADCAST SPECTRUM AND THE PUBLIC INTEREST: MOBILE BROADBAND SERVICES ARE INCREASINGLY ESSENTIAL TO THE PUBLIC INTEREST.

Broadcasters are not alone in providing emergency information and local news. Wireless providers provide critical emergency communications and information through E911, emergency alerts, wireless priority service, and critical public safety communications.[30] Wireless phones have become one of the most important safety tools by allowing users to stay up-to-date on emergencies and to have the ability to reach emergency service providers from wherever they are at any time. Wireless providers also provide news through FLO TV and local news streamed from the Internet.[31] Additionally, wireless providers offer other publicly beneficial services such

[30] Wireless providers are committed to ensuring that customers have access to E911 as required by the Commission's Rules, 47 C.F.R. § 20.18. In addition, wireless providers support emergency alerts that subscribers can elect to receive on their phones. *See* 47 C.F.R. Part 10; Wireless providers also provide Wireless Priority Service, which ensures that key personnel are given access to wireless networks ahead of other users during disasters when communications networks become congested and emergency personnel need to communicate with each other. 47 C.F.R. § 64 Appendix B, Priority Access Service For National Security And Emergency Preparedness.

[31] FLO TV is currently offered through AT&T and Verizon Wireless at this time. Currently, FLO TV offers access to a number of channels including news, sports, and family programming at the touch of a button. See What's On FLO TV, *available at* http://www.flotv.com.

as wireless Amber Alerts,[32] aiding in national security efforts through compliance with the Communications Assistance for Law Enforcement Act, 47 U.S.C. § 1001 *et. seq.*, and making wireless devices accessible to persons with disabilities through adherence to disabilities access requirements like the hearing aid compatibility rules.[33]

Indeed, the use of social media services, such as Twitter and Facebook, both of which have been strongly embraced by the Commission, as well as RSS feeds and videos are all able to be utilized by mobile devices on a real-time basis to encourage and advance political discourse.[34] In short, wireless broadband services also play a significant role in providing the American public with the same sort of beneficial services as are delivered by over the air broadcast services.

V. MARKET MECHANISMS FOR SPECTRUM CONTRIBUTION: THE COMMISSION SHOULD CONSIDER ALL OPTIONS TO INCENT THE MORE EFFICIENT USE OF BROADCAST SPECTRUM

CTIA believes that spectrum should be allocated and licensed to ensure the highest and best use. The current broadcast TV allocation model does not attempt to utilize market-based mechanisms for determining the highest and best use of scarce spectrum resources as it is based on a historic grant of licenses to broadcasters at a time when there were no substitutes for

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[32] The national Wireless AMBER Alerts Initiative is a voluntary partnership between the United States Department of Justice, the wireless industry, and the National Center for Missing & Exploited Children (NCMEC), to distribute AMBER Alerts to wireless subscribers who opt in to receive the messages and are able to receive text messages on their wireless devices. See http://www.amberalert.gov/wireless.htm.

[33] *See* 47 C.F.R. § 20.19.

[34] For example, users can access YouTube videos of Congressional sessions. Congress has partnered with YouTube to provide access to videos of Congressional sessions on dedicated YouTube channels. *See Congress, YouTube Bring On Demand Video to Government*, Podcasting News (Jan. 12, 2009), *available at* http://www.podcastingnews.com/2009/01/12/congress-youtube-bring-on-demand-video-to-government/.

traditional "over the air" broadcast service. Maximizing use of spectrum is not merely about providing a service over the spectrum resource, but about providing service to the most number of subscribers over that spectrum resource and by providing a service in a way that is spectrally efficient. By this metric, U.S. wireless providers are the most efficient spectrum users worldwide.[35]

The current broadcast allocation and licensing process fails to allow much flexibility in the provision of services. CTIA strongly recommends that the Commission carefully study any proposals that might allow for more efficient and flexible use of this spectrum. To this end, the Commission should consider various methods to increase economic-based incentives to increase spectral efficiency, such as auction mechanisms, relocation payments, and secondary markets transactions. Similar incentives have worked to maximize efficiency in the spectrum currently allocated to wireless providers. Indeed, the joint CTIA-CEA proposal filed today in this proceeding highlights one way by which the Commission might drive more efficient use of the broadcast television spectrum.

VI. CONCLUSION

The record in this proceeding overwhelmingly demonstrates that current spectrum allocations for wireless services are insufficient to meet explosive demand for wireless broadband services. To meet projected demand CTIA has asked the Commission to identify and allocate a significant amount of additional spectrum – at least 800 MHz – for licensed commercial wireless use. Over-the-air television broadcasters are vastly underutilizing spectrum

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[35] "With more than 651,000 subscribers served per MHz of spectrum allocated, U.S. carrier efficiency far surpasses that of other carriers in the OECD's top ten countries by GDP." *Ex Parte* Communication from Christopher Guttman-McCabe, CTIA—The Wireless Association, to Julius Genachowski, Chairman, and Michael J. Copps, Robert M. McDowell, Mignon Clyburn, and Meredith Attwell Baker, Commissioners, Federal Communications Commission, GN Docket No. 09-51 at 16 (filed Sept. 29, 2009).

that would be ideal for mobile broadband use. Given the very high and growing consumer demand and the economic and public welfare benefits of mobile broadband and the inefficient use of spectrum by broadcasters, the Commission should act expeditiously to provide an evaluation to Congress on the ability of broadcast spectrum to utilize less spectrum than originally authorized. As part of that effort, the Commission should give strong consideration to the proposal jointly filed today with CEA, which would allow for more effective use of broadcast spectrum by television operators while recapturing significant amounts of spectrum for mobile wireless broadband.

Respectfully submitted,

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