

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington DC 20554**

In the Matter of)	
)	
Spectrum for Broadband)	GN Docket Nos. 09-47, 09-137
)	
A National Broadband Plan for Our Future)	GN Docket No. 09-51

To: The Broadband Task Force

COMMENTS — NBP PUBLIC NOTICE #26

**THE ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC. AND
THE NATIONAL ASSOCIATION OF BROADCASTERS**

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Introduction and Summary

The Association for Maximum Service Television, Inc. (“MSTV”)¹ and the National Association of Broadcasters (“NAB”)² submit these comments in response to the Commission’s *National Broadband Plan Public Notice #26* (“Notice”). Broadcasting is a vital part of the country’s wireless landscape, and innovations currently being introduced will only enhance its value to consumers. Broadcasting and wireless broadband should both be viewed as essential and complementary parts of the nation’s communications ecosystem. All viewers, whether they rely on over-the-air television or pay to subscribe to a cable or direct broadcast satellite system, benefit from the services provided by local broadcasters, including emergency information and alerts and local journalism. And, with the imminent roll-out of mobile DTV, broadcasters are poised to meet consumer demand for mobile video — one of the key services

¹ MSTV is a nonprofit trade association of local broadcast television stations committed to achieving and maintaining the highest technical quality for the local broadcast system.

² NAB is a nonprofit trade association that advocates on behalf of local radio and television stations and also broadcast networks before Congress, the Federal Communications Commission and other federal agencies, and the courts.

behind the wireless industry's claims to need more spectrum. Such service can be offered more effectively, efficiently, and expeditiously by broadcasting's point-to-multipoint distribution architecture and technology.

The *Notice* asks a series of questions relating to television broadcasting's use of spectrum and raises the possibility of re-allocating broadcast spectrum for wireless broadband use. To the extent that more spectrum is needed for broadband uses — a proposition that should be tested fully — the Commission should not assume that broadcast spectrum is the best or even a viable place to find that spectrum. Rather, the FCC should conduct a comprehensive inventory of present and future spectrum usage by all parties (including the wireless industry, satellite, broadcasters, and the government). In “Broadcasting and the Broadband Future: A Proposed Framework for Discussion,” MSTV and NAB lay out recommendations for how the Broadband Task Force should undertake this assessment of wireless needs.³ The Commission should conduct a complete spectrum usage assessment to explore the relative benefits and costs of re-allocating spectrum from any given use or industry to another before starting down any such path.

MSTV and NAB here provide initial responses to certain questions raised in the *Notice*. But four overarching principles should be noted at the outset. First, broadcasting and broadband are not “either/or” propositions; that is a false choice. Second, local television broadcasting offers an array of social benefits (sometimes known as public goods), and these social goods are not replaceable by other services. Third, the Commission must be guided in its

³ A copy of the Framework Document is attached for ease of reference. Given the short time afforded broadcasters and the public to comment on these critical issues, MSTV and NAB intend to submit additional information in the future.

spectrum policy decisions by Section 1 of the Communications Act⁴ and by Congress's directive to provide *local* service.⁵ Finally, throughout the DTV transition, the Administration, Congress and the Commission told American consumers that they would benefit from the digital transition. With digital broadcasting consumers would be able to receive free, over-the-air, high definition television and additional off-air multicast program services. Less than six months after the transition was completed, wireless advocates are now asking the Commission to adopt spectrum policies that renege on this promise. We urge the Commission to keep its covenant with the American people.

A. General Approach to Spectrum Assessment

1. *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?*

This question in the *Notice* presumes that the relative merits of the two services should be evaluated as a zero sum. That is a false choice. Both broadcasting and broadband provide services that are valuable to American consumers. In this regard, the Commission should fully consider the benefits of the public's local television broadcasting service. That means consideration not just of the market benefits of broadcasting to which the Commission can assign a monetary value using conventional economic techniques, but also of benefits to the

⁴ 47 U.S.C. § 151 (requiring the Commission to regulate in the interests of providing universal communications for all communities and for various interests including promoting the safety of life and property).

⁵ *See* 47 U.S.C. 307(b) (requiring the Commission to “make such distribution of licenses, frequencies, hours of operation, and of power among the several States and communities as to provide a fair, efficient, and equitable distribution of radio service to each of the same”); *Pacific Broadcasting of Missouri LLC*, 18 FCC Rcd 2291, 2293 (2003) (“In carrying out the mandate of Section 307(b), the Commission has long recognized that ‘every community of appreciable size has a presumptive need for its own transmission service.’ . . . During the past fifty years, the Commission has developed allocations policies that accord great weight to establishing and preserving first local transmission services.” (citations omitted)).

public that are public goods and are not reflected in market valuations. The Commission should take into account that broadcaster services cannot be duplicated or replaced by wireless broadband or cable and satellite services. And the Commission should consider the costs to consumers, who have invested approximately \$109 billion dollars in HD receiving equipment. This investment should not be stranded.

Local, over-the-air television service is a public good. It is provided for free, to all viewers. It provides local news and information, including emergency information and alerts, supports local commerce and jobs, and helps achieve a range of public policy goals, from diversity and innovation to public service and educational/informational programming for children. Local broadcasters offer content that consumers want, from high-definition programming to local news to multicast services, and, soon, mobile DTV. As discussed in greater detail in the attached Framework Document, these services benefit cable and satellite subscribers, not just over-the-air television viewers. They benefit each local community that broadcasters serve, and, by helping to bring communities together, they benefit the country as a whole.

Broadcasting is a key element of our nation's communications ecosystem. The advent of mobile DTV will further enhance its role. Mobile DTV offers a highly efficient means of satisfying consumer demand for mobile video. *See* Framework Document at Section I(A). Demand for mobile video is one of the key components in models used to support claims for additional wireless broadband spectrum. With consumer demand for mobile video particularly focused on the content that broadcasters offer, including local news programming,⁶ it is clear that

⁶ *See* Frank N. Magid Associates, Inc., *The OMVC Mobile TV Study: Live, Local Programming Will Drive Demand for Mobile DTV*, available at (continued...)

broadcasting should play a lead role in meeting the demand for mobile video — and thereby reduce capacity demands on wireless broadband systems.

Turning from spectrum utilization to consumer utilization, consumers spend much more time watching over-the-air television service than using wireless broadband. According to Nielsen, the average American watches more than 151 hours of television programming per month. Adjusting for the portion of the population that relies on over-the-air television (including pay-TV households that have additional television sets not hooked up to MVPD service and consumers that use PCs, laptops, and netbooks with DTV receiving capability) yields a rough estimate of 5.6 billion people-hours per month of over-the-air television consumption. By comparison, consumers spend approximately 2 hours per month using wireless broadband. Adjusting for the portion of the population that uses wireless service yields a rough estimate of 230 million people-hours per month of wireless broadband use.

Both broadcasting and broadband provide services that are valuable to American consumers. To the extent that the Commission determines that additional spectrum should be allocated for wireless services, it should do so on the basis of a fully-informed spectrum inventory and usage analysis. It should not presume that this spectrum should be re-allocated away from the important services that broadcast television is currently providing to the public and will provide in the future.

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

http://www.openmobilevideo.com/_assets/docs/press-releases/2009/OMVC-Mobile-TV-Study-December-2009.pdf. This recent study showed that 88 percent of consumers are interested in watching local news and information on a mobile device, more than for other categories of content such as entertainment (65 percent) or sports (44 percent).

The Task Force should not assume the validity of either the wireless industry's claims to need more spectrum or the presumption that allocating additional spectrum would lead to greater broadband penetration, spectrum efficiency, and public benefits.

749 MHz of spectrum already is available for use on a licensed basis for mobile broadband between 225 MHz and 3.7 GHz.⁷ Much of this spectrum is not deployed, or is just beginning to be put into use. In addition, hundreds of megahertz of spectrum are available on an unlicensed basis for broadband use.⁸ Some have alleged that the United States is behind other countries in the amount of spectrum “in the pipeline” for broadband. But these international comparisons ignore the fact that the countries cited in these comparisons (such as the United Kingdom, Germany, and France) have not yet reaped their “digital dividend” created by transitioning to digital television. As a result, they are far behind the United States in terms of making available additional wireless spectrum. These examples also demonstrate that if these countries are in fact ahead of the United States in broadband usage, it is not due to greater spectrum availability. There is, in fact, no demonstrated nexus between the amount of allocated wireless spectrum and broadband usage.⁹

First, as Section IV of the Framework Document demonstrates, the principal support for the claim to need more spectrum comes from an International Telecommunication Union (“ITU”) model. CTIA uses this model to assert that there will be a shortfall of 800 MHz

⁷ See Technical Review (Attachment A to the Framework Document) at Section III(B) and Table 1.

⁸ See MSTV and NAB Comments – NBP Public Notice #6, at 3-6 (Oct. 23, 2009).

⁹ See Draft Berkman Center for Internet & Society at Harvard University, *Next Generation Connectivity: A Review Of Broadband Internet Transitions And Policy From Around The World*, Oct. 2009, available at http://hraunfauss.fcc.gov/edocs_public/index.do?document=293955; see also Technical Review at Section III(D).

for broadband in 2015. The ITU model, however, does not present an appropriate basis for determining needs in the United States. A review of the ITU model shows that it is very sensitive to input parameters and assumptions.¹⁰ For example, changing certain parameters for video and multimedia market share changes the results to suggest that no additional spectrum would be needed even by 2020. The validity of the ITU model also is called into question by examining the model's spectrum requirements, predictions, and performance in the near term. The same model that CTIA uses to show a shortfall of 800 MHz in 2015 indicates that in 2010 there is a shortfall of 300-500 MHz, which is a demonstrably false conclusion. The wireless industry's claims to need additional spectrum should not be justified on the basis of a model's highly speculative future predictions, especially when that model fails to assess spectrum requirements accurately in the near-term.

Second, the Commission should analyze the potential of non-spectrum-based distribution mechanisms, such as landlines, fiber, and cable, and their impact on the spectrum requirements and anticipated demand for wireless broadband service. It should, in addition, consider how wireless broadband providers can use existing spectrum resources more efficiently. Projections of spectrum needs six to ten years out should also account for the innovations that will inevitably emerge over the next few years, ranging from femtocells and other new technologies/techniques to improved ability to use existing and potential new spectrum allocations.¹¹ Allocation of additional spectrum for wireless uses could undermine investments in improving the efficient use of spectrum.

¹⁰ See Technical Review at Section III(D).

¹¹ See Technical Review at Section IV.

Third, as stated earlier, a key component of the wireless industry’s claims to need more spectrum is the projected increase in demand for mobile video — a demand that digital broadcasting can satisfy more quickly, less expensively, and in a more spectrally efficient fashion.¹²

3. *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?*

It is difficult to respond to this question without any specific repacking proposal or details to consider. Generally speaking, however, repacking DTV broadcast stations could cause serious disruptions to the public’s broadcast television service, and many viewers could lose substantial or all local television service. These disruptions would be orders of magnitude worse than those that the public experienced during the transition to digital television, when a limited number of broadcasters instituted necessary facility changes. Under a repacking regime, many more, probably most, stations would be forced to relocate and again rebuild their DTV transmitting facilities, with corresponding loss of service to viewers and harmful effects on the economy. The Commission has recognized repeatedly the importance of access to DTV broadcast services, particularly local news and emergency information.¹³ But repacking broadcast stations could result in substantial areas where no local over-the-air digital television service would be available and areas where the number of these services would be reduced

¹² See *id.* at Sections III(E) and V(C)-(D).

¹³ See, e.g., *FCC Requires Public Interest Conditions for Certain Analog TV Terminations on February 17, 2009*, Public Notice, FCC 09-7 (Feb. 11, 2009) (establishing “enhanced nightlight” service to ensure that “viewers relying on over-the-air television do not lose access to local news, public affairs and emergency information before they are ready for the full power television transition to all-digital television service” and identifying 123 stations “whose early [analog] termination poses a significant risk of substantial public harm”).

substantially.¹⁴ It has long been a basic tenet of national communications policy, reaffirmed during the DTV transition, that losses in the public’s over-the-air reception raise weighty public interest concerns.

Moreover, diminishment of over-the-air digital broadcast television service — its ability to reach all of a station’s viewers and local cable headends and satellite-receive facilities, and to support advanced high definition, multicast, and mobile DTV services — would undercut local broadcast television’s competitive viability in the digital marketplace. By harming the health of local television stations, repacking would impair their ability to sustain the unique, core services that they provide to the public: local journalism, emergency information, free and universal HDTV programming, multicast programming, and other community-responsive services. *See* Framework Document at Sections I(B)(3) and III(A). It would disserve the public interest to take actions that would result in wholesale reductions in the service that Chairman Genachowski has recognized as “an essential medium, uniquely accessible to all Americans.”¹⁵

¹⁴ *See Implementation of the DTV Delay Act*, MB Docket No. 09-17, Third Report and Order and Order on Reconsideration, 24 FCC Rcd 3399, at paras. 38-48 (2009) (requiring daily “service loss notices” to advise viewers of predicted losses, describe “the discrete geographic areas where there is likely to be a service loss,” and provide FCC Call Center information. The FCC imposed additional requirements for stations that would experience service losses due to changes from the Very High Frequency (“VHF”) band to the Ultra High Frequency (“UHF”) band); *see also* 47 CFR § 73.674(b)(5).

¹⁵ Statement of Julius Genachowski, Chairman, FCC, Before the United States Senate Committee on Commerce, Science and Transportation, Hearing on “Rethinking the Children’s Television Act for a Digital Media Age” (July 22, 2009) (“Statement of Julius Genachowski”).

4. *How do television broadcasters use the capabilities of digital television today? Please provide information on data rate allocations to HD, SD, multicast streams, bandwidth leasing arrangements, etc. and the business rationale behind these choices.*

The ATSC standard provides for a data rate of 19.39 Mbp/s per 6 MHz channel.

A broadcast station can offer a mix of video/data streams within that 19.39 Mbp/s capacity, including high-definition television, standard definition television, multicast streams, mobile DTV, and ancillary/supplemental services. Bit rates for these services can vary. For example, a station can transmit as many as 10 or more video streams depending on the applications or services offered and still deliver a high quality standard definition program to conventional fixed DTV receivers. Alternatively, a station can deliver just one or two mobile DTV streams in addition to a high definition program service. As noted in the Framework Document at Section III(A) and footnote 69, however, it would not be possible to provide two streams of full-quality HD programming on a single 6 MHz channel.

Just six months after the transition to digital television, broadcasters are airing over 1,400 multicast services.¹⁶ These services contribute to diversity and localism in this country. Multicasting also permits stations to provide valuable niche programming, offering highly localized news, emergency information and alerts, and advertising services. The following chart shows the current operations of DTV stations in the Washington, DC area and compares these operations to the previous analog service provided by the same stations. These nine stations now offer over two dozen program channels and eight experimental mobile DTV services.

¹⁶ According to Media Access Pro(tm), BIA/Kelsey.

Station	Past Analog Service	Current Digital Service
WRC	Single channel of NBC programming, syndicated programming, local news and weather	NBC programming in 1080i HD, local news and weather
		Second channel of 24-hour weather
		Third channel multicast of SD programming, including sports (Olympics, ice skating, etc.) and NBC programming
		Mobile DTV Experimental Operations
WUSA	Single channel of CBS programming, syndicated programming, local news and weather	CBS programming in 1080i HD, local news, and weather in HD
		Second channel of 24-hour weather
		Mobile DTV Experimental Operations
WNVC and WNVT (MHz Networks)	Single channel of world news and foreign programming	MHz Worldview
		NHK World TV in English and Japanese
		Metro Chinese Network (in Mandarin and English)
		Russia Today TV
		Al Jazeera English
		South African News International
		France 24-news programming
		Nigerian Television Authority
		Vietnam TV 4
		Euronews
		DTV Mobile Experimental Operations
WETA	Single channel of PBS programming	WETA TV 26 PBS programming
		WETA HD prime time programming in HD quality
		WETA CREATE how to, cooking, and travel programming
		WETA KIDS children programming
WDCW	Single channel of CW programming	CW programming in HD, local weekend news, sports, and community affairs
		Second channel with ThisTV programming
		Two channels of mobile DTV experimental operations
WJLA	Single channel of ABC programming	ABC programming in 720p HD
		Second channel of 24-hour weather
		Third channel – Retro Television Network
WPXW	Single channel of ION programming	ION programming in 720p HD
		Second channel of qubo (children's) programming
		Third channel of ION life programming
		Fourth channel of Worship programming
		Two channels of mobile DTV experimental operations
WHUT	Single channel of PBS programming	PBS programming in HD
		PBS programming in SD
		Mobile DTV Experimental Operations

Potential revenue streams generated by delivery of multicast services, mobile DTV, and ancillary/supplemental services will help support broadcasters' core operations/services and future innovations. Various spectrum re-allocation proposals would undermine local broadcasters' ability to invest in local news operations and other existing services, and they would prevent them from launching new services that would expand the benefits they provide to the public and help defray their sunk costs. The combined effect of these harms ultimately would threaten the fragile viability of the country's broadcast service in a difficult economic environment where challenging long-term trends are likely to intensify.

5. *How do broadcasters plan to use licensed spectrum in the future?*
 - a. *What innovations in applications, services, or business models will create synergies between broadband and broadcast services, or other new value from currently licensed spectrum?*
 - b. *How should the Commission evaluate the future economic value of over-the-air digital television and new capabilities to offer mobile TV broadcasting? How does the financial community in general view that future value?*

Broadcasters are rolling out mobile DTV services. The recently-adopted mobile DTV standard enables broadcasting to provide real-time, mobile-streaming video,¹⁷ along with interactive services such as programming guides, audience measurement tools, and viewer voting.¹⁸ Mobile DTV will dramatically expand the distribution of emergency information and

¹⁷ The mobile DTV standard handles issues such as Doppler shift and multipath radio interference to provide a robust signal to devices moving at high speeds. It employs extra training sequences and forward error correction to prevent video pixilation and other video degradation characteristics. And it incorporates several energy-saving features, such as bursted transmissions and time-slicing, to optimize mobile device battery life and thus improve the consumer's experience.

¹⁸ The standard provides an application framework to enable incorporation of Internet-style personalization and interaction. For instance, a news report could include links that could take a viewer to online content. The standard also allows receivers to take advantage of improved (continued...)

alerts to members of the public outside their homes (or inside of their homes, during power outages) and could reduce the demands placed on other emergency communications systems. Mobile DTV is a consumer-friendly technology that illustrates the synergies between broadcasting and broadband: it will provide consumers with desirable, popular programming on a mobile basis, and it will do so on a spectrally efficient, point-to-multipoint basis. As the Spectrum Director of the National Broadband Taskforce has observed, “the answer may well be to find an innovative way to do what broadcasters do best — deliver video wirelessly to receivers — to solve one of the biggest challenges facing mobile broadband today — delivering video wirelessly to receivers.”¹⁹

With the transition to digital television complete and with consumers equipped to receive digital signals, local broadcasters and programmers are beginning to realize the potential of multicasting. The 1,400 multicast programming services that broadcasters are now offering contribute to diversity and local service. Some stations also use multicasting to provide more targeted niche programming, offering local news, emergency information, and advertising opportunities tailored to smaller populations or geographic areas within their communities. Broadcasters use their digital spectrum to provide ancillary/supplementary services, such as data and software transmissions, interactive services, and multichannel alternatives to cable and satellite, such as the blended, broadcast-broadband system offered by Sezmi. The innovative Sezmi service, which seamlessly meshes over-the-air broadcast and broadband video options, is described in more detail in the Framework Document at Section II.

technological advances like adding or removing Digital Rights Management (“DRM”) capabilities, and replacing the encoding methodology to use more efficient algorithms.

¹⁹ Rebecca Hanson, Finding a Creative Spectrum Solution (Dec. 8, 2009), available at <http://blog.broadband.gov/blog/index.jsp?entryId=17436>.

Future digital broadcasting innovations include the development of the next generation of services for fixed DTV receivers.²⁰ The television industry and other industries are exploring ways to increase the current 19.39 Mbp/s data throughput per 6 MHz television channel. This would enable even more efficient use of the broadcast spectrum while introducing new services to a new generation of receivers. New services currently being studied include the delivery of file-based, non-real-time program delivery; 1080p/60 video; and interactivity.

Narrowly-focused economic assessments are not suitable for determining the full value of broadcast services to the public. Moreover, reliable calculations of economic value are not possible for nascent services such as mobile DTV and multicasting. In this context, snapshot evaluations of broadcasting's economic value are inherently misleading, as they do not and cannot account for future growth and innovation.

6. *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? What can the Commission do to help broadcasters participate in this evolution?*

Concentrated viewership for popular programs remains very strong. According to a recent Nielsen report, 99 percent of video viewing in the United States during the third quarter was via traditional television watching.²¹ The average viewer watched 31 hours of television per week, 32 minutes of which were in playback mode on DVRs. In contrast, the average consumer watched three minutes of mobile video and watched 22 minutes of online video. During the week of November 9, 2009, over 176 million people watched the top ten shows on broadcast

²⁰ ATSC, Press Release, ATSC Salutes the 'Passing' of NTSC, (June 12, 2009), *available at* http://www.atsc.org/communications/press/2009-06-12-NTSC_End_Final.pdf.

²¹ Nielsen Research, *Three Screen Report: TV Remains Strong as DVR and Online Video Show Most Growth*, NielsenWire (Dec. 7, 2009).

television.²² As a point-to-multipoint system, broadcasting is far more efficient than a point-to-point broadband system in distributing popular video content to the public, whether in-home or, via mobile DTV, on the go. Moreover, broadcasters are launching new mobile DTV services now, without needing any additional spectrum resources or disrupting the public's reliance on other spectrum-based services.

The unstated and unexamined premise for Question A-6 is that broadcasting is falling behind in the new media environment. But the reality is that broadcast television is adjusting to new viewing patterns that result from DVR usage, time-shifting and others. Viewing of broadcast programming is very strong and time-shifting increases viewing of these programs, particularly for non-time-sensitive popular programs. One challenge has been for broadcast advertising revenues to reflect these new viewing patterns. But the rating services are beginning to adjust to these challenges, and new technologies and services are emerging to measure these viewing trends. Mobile DTV, too, can be used with digital video recording technology that permits storage and playback at the viewer's convenience, which also can be measured.

Another example of broadcasters expanding their audience reach through new services is their successful embrace of the Internet. For example, the websites provided by local broadcasters are the most popular websites for local journalism.²³

²² Nielsen, TV Ratings, <http://en-us.nielsen.com/rankings/insights/rankings/television> (accessed as of December 3, 2009) (providing ratings data for Broadcast TV in the United States for the week of November 9, 2009).

²³ According to the Television Advertising Bureau, 33.4 percent of adults 18 and older turn to local broadcast television websites for local news. The next most popular local website for news are those run by local newspapers, at 25.7 percent. See TVB, Nielsen Media Research Custom Survey 2008, http://www.tvb.org/nav/build_frameset.aspx, visited December 21, 2009.

The Commission can facilitate broadcasters' adapting to and taking advantage of these new trends by allowing them to utilize their current spectrum resources to continue serving their communities in innovative ways.

7. *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 Commission first issued licenses for such services. 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. Please comment on subsections (2) and (3) of Section 336(g) that require the Commission to conduct:*
 - a. *an assessment of alternative uses, including public safety use, of the spectrum used for advanced television broadcasts; and*
 - b. *an evaluation of the extent to which the Commission may be able to reduce the amount of spectrum assigned to advanced television broadcast licensees.*

Section 336(g)(1) of the Communications Act, which Congress enacted in 1996, provides for the Commission to evaluate the progress of "advanced" (digital) television services. When viewed in its historical context, Section 336(g)(1) does not, as CTIA and CEA have suggested,²⁴ require the Commission at this post-transition stage to investigate ways to re-allocate broadcast spectrum. The Commission is not obligated to conduct such an evaluation and it would be a waste of resources to do so, because Congressional and Commission actions subsequent to the adoption of Section 336(g)(1) obviate the need for it. Those actions include

²⁴ See Ex Parte Letter of CTIA – The Wireless Association and the Consumer Electronics Association in GN Docket No. 09-51 (filed Nov. 17, 2009).

Congress's establishing a "hard-date" deadline for the digital transition²⁵ and the FCC's recovering 108 MHz of broadcast spectrum for public safety and other purposes.

When Section 336(g)(1) was enacted, neither Congress nor the Commission had set a specific date for the digital transition.²⁶ Congress simply did not know whether the transition would succeed. As Section 336(c) makes clear, at the time that Section 336(g) was enacted Congress had determined that the Commission would reclaim one of the two broadcast licenses (either the digital or the analog license) but left it to the Commission to decide which one.²⁷ Section 336(g)(1) was adopted with these concerns in mind. In that context, it is an incorrect interpretation of this provision to conclude that Congress was directing the Commission to do a *post*-transition review of the broadcast spectrum.

Sections 336(g)(2) and (g)(3) have also been made inapplicable through subsequent Commission action. Section 336(g)(2) relates to the possibility of allocating some broadcast spectrum to alternative uses, in particular public safety, and Section 336(g)(3) relates to evaluating the possibility of reducing the spectrum allocated to broadcasting. The Commission addressed both of these points in its 1997 Sixth Report and Order on the digital transition. There the Commission announced that it would allot DTV channels only within the range of channels 2 to 51, re-allocating the spectrum above Channel 51 for other uses. These

²⁵ See § 3002, Digital Television Transition and Public Safety Act of 2005, Pub. L. 109-171, 120 Stat. 4.

²⁶ See, e.g., § 201, Telecommunications Act of 1996; Fourth Further Notice of Proposed Rule Making in MM Docket No. 87-268, 10 FCC Rcd 10540 (1995).

²⁷ 47 U.S.C. § 336(c); see also Conference Report, Rep. 104-458 at 161 (1996) ("The conference agreement retains the requirement in the House amendment that the Commission condition the issuance of a new license on the return, after some period, of either the original broadcast license or the new license. However, the conference agreement leaves to the Commission the determination of when such licenses shall be returned and how to re-allocate returned spectrum.").

steps satisfied the objectives of Section 336(g)(3).²⁸ Similarly, the Commission satisfied the objectives of Section 336(g)(2) when it enabled the early recovery of channels 60-69 to provide “additional spectrum . . . to meet the needs of public safety and other land mobile services.”²⁹

For these reasons, the reviews specified by Section 336(g) are no longer needed.

B. Potential Approaches To Increase Spectrum Availability And Efficiency

- 1. What are the advantages of a channel-sharing approach to broadcasters’ business? What are the disadvantages of this approach? What are the technical and business requirements to enable successful channel sharing?*

Various forms of channel-sharing have been proposed, but are not specified in Question B-1. Without particular proposals to analyze, it is difficult to specify the disadvantages of channel-sharing. In general, however, channel-sharing would harm consumers because it necessarily would mean that broadcasters could not provide high-definition signals, a particularly harmful and unfair outcome given that consumers have spent \$109.8 billion dollars on HD television sets since 2003.³⁰ Channel-sharing also would force broadcasters to turn off or never begin multicasting services, and it would preclude broadcasters from offering mobile DTV services. (*See* Framework Document at Section II.)

In addition, over-the-air delivery of television broadcast signals to cable and satellite systems would be threatened by various channel-sharing schemes. As many as 50 percent of the cable headends in this country rely on the signals of over-the-air television stations to retransmit the HD and SD programs of local television stations. DBS likewise places heavy

²⁸ *Sixth Report and Order*, 12 FCC Rcd 14588, 14627 (1997).

²⁹ *Id.* at 14626; *Reallocation of Television Channels 60-69 to Other Services*, 12 FCC Rcd 22953, 22958 (1998).

³⁰ *See* Framework Document at Section I(A)(2). *See also* Consumer Electronics Association, “FastFacts Historical Data” (2009).

reliance on over-the-air HD and SD signals in order to provide broadcast television programs to their subscribers.³¹ All these services would be put in jeopardy by channel-sharing. In addition to hurting broadcast services and the public, these adverse consequences could be particularly severe for smaller MVPDs.

As broadcasters face a harsh economic environment that threatens the financial base of their local service, new multicast, mobile DTV, and ancillary/supplemental services may help support their operations. If the spectrum resources necessary to provide these services are diminished, the public will suffer.

5. *What percentages of broadcast programming streams are transmitted to MVPDs by over-the-air broadcast? What percentage of MVPD subscribers receive their broadcast TV stations via an over-the-air broadcast link (either directly or through the MVPD)? What would be the costs to replace over-the-air delivery to MVPDs and consumers with other means (fiber, microwave)?*

Over-the-air television signals often serve as the primary transmission path for sending digital programming, including HDTV programming, to MVPD systems. The broadcasting, cable, and satellite industries spent nearly a year coordinating with each other to ensure that all receive sites were able to receive local digital television signals. There are approximately 7,853 cable systems in the United States³² and the number of cable headends/receive sites may exceed 12,000.³³ Up to 50 percent of all cable headends receive

³¹ See discussion, *infra*, at 19-20.

³² National Cable Television Association (“NCTA”), 2008 cable system data, available online at <http://www.ncta.com/Stats/CableSystems.aspx>, visited December 21, 2009.

³³ According to NCTA, there are “8,763 cable headends which report data in terms of homes passed. These headends provide cable service that passes a total of 88,446,838 homes. Moreover, there are an additional 3,324 cable headends for which Nielsen does not have any homes passed data. These 3,324 systems serve 12,491,842 subscribers.” Reply Comments of NCTA, MB Docket No. 02-145 (August 2002) at 18.

broadcast programming over-the-air. Broadcast DTV signals are then combined with satellite-delivered cable network programming and retransmitted throughout the cable system to subscribers.³⁴ The number of cable headends relying on-over-the air signals is likely to be higher in rural and remote areas, served by smaller systems.³⁵

The same high level of reliance on over-the-air signals also applies to satellite services. During the transition, DirecTV and the DISH network installed off-air digital receiving equipment in 182 television markets.³⁶ According to DirecTV, 73 percent of all television station signals (both HD and SD) are received over-the-air at its local collection facilities.³⁷ In addition, a number of DirecTV's satellite subscribers use a hybrid system. Local signals are received over-the-air with an antenna, and then are combined in the satellite set-top box with additional satellite programming. This system is common in markets without local-into-local service. But in many other markets as well, large numbers of subscribers use this hybrid system, which required intensive cross-industry coordination efforts during the DTV transition.³⁸

In addition, local television stations deliver signals to tens of thousands of master antenna systems. A master antenna system receives a broadcast signal over-the-air, and

³⁴ The National Cable Television Association has noted that “[i]n the case of broadcast television programming, most cable headends receive terrestrial broadcast signals by using tower-mounted high-gain directional terrestrial antennas, subsequently combining them with cable programming for retransmission within the cable system.” Comments of the NCTA in ET Docket No. 04-186, 02-380 (Nov. 30, 2004), at 2; *see also* Reply Comments of NCTA in ET Docket No-04-186, 02-380 (Mar. 2, 2007) at 11.

³⁵ Mr. Matthew Polka, President, American Cable Association, e-mail correspondence with Mr. David Donovan, President, MSTV, December 18, 2009.

³⁶ *See* MSTV website, <http://www.mstv.org/docs/satschedalpha.pdf>.

³⁷ Ms. Stacy Fuller, VP Government Affairs, DIRECTV, e-mail correspondence with Mr. David Donovan, President, MSTV, November 24, 2009.

³⁸ Statement of David L. Donovan, President, MSTV, before the Federal Communications Commission, June 3, 2009, at 2.

retransmits it by wire throughout a multi-unit building. Such systems are common in apartments, condominiums, cooperatives, schools, nursing homes, government buildings, assisted living facilities, and countless office buildings across the nation. During the DTV transition, the FCC took extra care to reach out to groups with master antenna systems to make sure they continued to receive services, including the HDTV and multicast offerings provided by local digital television stations.³⁹ The costs of reaching tens of thousand of master antenna systems with direct fiber connections could range in the hundreds of millions (perhaps billions) of dollars. Using fiber links in many suburban and rural areas would be cost prohibitive. In highly urbanized areas, where spectrum is scarce, it will be similarly expensive to secure a microwave link. The capital costs of installing new receivers make this option cost-prohibitive.

It is difficult to provide accurate estimates of the cost of replacing over-the-air signals to cable headends, satellite local collection facilities, and master antenna systems. Costs will vary significantly based on the market, terrain, and the number of separate cable system headends and satellite local collection facilities in a market. In addition, the cost of the fiber link or microwave connection may increase if a station crosses tariff boundaries to reach a distant cable headend or receive facility. The cost of fiber links may range from \$1,500 to \$12,000 per month per connection.⁴⁰ Depending on the market, a single station may need to connect to as many as 30 different cable headends or receive sites.⁴¹ Considering that there may be more than

³⁹ See, e.g., Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion To Digital Television, *Report and Order*, 23 FCC Rcd 2994, at paras. 176-179 (Dec. 31, 2007).

⁴⁰ These data are based on preliminary discussions between MSTV and broadcast engineers.

⁴¹ One approach to estimating the annual costs of reaching cable headends with fiber would be based on the following formula: *Total Estimated Cost of Reaching Cable Systems with Fiber* = (continued...)

10,000 cable headends/receive sites and more than 1,700 television stations in the United States, the overall costs of reaching cable systems could range from a low of about \$400 million to billions of dollars per year. Add to this amount the cost of reaching satellite local collection facilities and master antenna systems and total costs will increase even more. This is an annual, not a one-time, cost for local stations.

Using additional microwave links is similarly expensive and, often, not a realistic option. The initial capital costs for installation may be up to \$40,000 per site. Annual costs increase this amount. Multiple hops may be necessary to reach outlying cable systems. Moreover, using microwave links is not spectrally efficient. In effect, stations would be forced to obtain additional spectrum to reach cable headends, satellite receive sites, and master antenna systems. It is far more efficient to use the station's primary, over-the-air signal as the link.

In summary, relying on fiber optic links or microwave transmissions to reach cable headends, satellite collection facilities, and master antenna systems is costly and inefficient. These additional costs are likely to disenfranchise millions of cable, satellite, and master antenna subscribers, especially in rural areas.⁴² The more efficient model is for local television stations to continue to provide a full 6 MHz (19.39 Mbps), over-the-air signal for these purposes.

(Cost per fiber link per month) x (12 months) x (number of stations) x (number of head ends to be reached).

⁴² Some have noted that stations can rely on direct satellite systems to reach distant cable headends and master antenna systems. Apart from the competitive issues, satellite systems do not necessarily carry all of a station's multicast or HDTV offerings. In fact, not all local stations are carried by satellite services. Accordingly, this proposal would not be an effective alternative for reaching a rural cable headend with over-the-air television signals.

C. **Broadcasting and the Public Interest**

Broadcasters have historically played an important role in advancing public interests through free over-the-air broadcast TV. What are the benefits of free, over-the-air television broadcasting, in particular with respect to public awareness of emergency information, local news, political discourse, and education?

Local stations provide over-the-air viewers and virtually all other television viewers with irreplaceable benefits. These benefits include free local programming, network programming, syndicated programming, and special events — often and increasingly in high definition — as well as free multicast services and emergent mobile DTV services. Local broadcast television is a vital alternative to expensive subscription services. Chairman Genachowski has observed that broadcasting is “the exclusive source of video programming relied upon by millions of households in this country.”⁴³ And Commissioner Copps has commented that “[f]or many people, free, over-the-air television is their primary source of news, information and emergency alerts — not to mention entertainment.”⁴⁴ *See Framework Document at Section I(A)(1).*

In addition to promoting local businesses, creating jobs and providing other economic benefits to local communities, local television produces a wide array of social benefits — social benefits that neither broadband providers or others can replace. Local broadcasting also advances consumer welfare and public safety, provides a forum for civic participation,

⁴³ *See Statement of Julius Genachowski.*

⁴⁴ *See Press Release, Ten Days and Counting to DTV Transition (June 2, 2009).*

distributes educational and information programming, and promotes local organizations, causes and charities.⁴⁵

Other hard-to-measure benefits of our country's local television broadcasting system include universal service, innovation, public interest programming, and provision of universally-available service that is heavily-relied upon particularly by elderly and rural populations and by African-Americans, Hispanics, and other minorities. By coordinating with local law enforcement via Amber Alerts, broadcasters have participated in the recovery of 492 abducted children. In times of emergency, local television stations are often the only available source of reliable information (whether the consumer accesses that information by tuning in to the station's over-the-air signal, the station's signal as carried by a subscription service, or even the station's website). In situations like Hurricane Katrina or the bridge collapse in Minneapolis, local broadcasters often provide non-stop, commercial-free coverage in order to serve the viewing public. Broadcasters also provide critical coverage of local issues that simply is not available elsewhere. The Senior Advisor to the Chairman has noted that "full time, local, professional journalism" is "crucially important for democracy. It enables citizens to hold leaders accountable and to obtain the information they need."⁴⁶

All of these economic and non-economic benefits must be considered in determining the value of broadcasting and whether it is in the public interest to re-allocate its

⁴⁵ See NAB's Comments in the Federal Trade Commission's New Media Workshop, Project No. P091200 (Nov. 6, 2009) (attached to the Framework Document as Attachment B). See also NAB's Reply Comments, In re: Broadcast Localism, MB Docket No. 04-233 (June 12, 2008) at 6-27; NAB's Comments, In re: Broadcast Localism MB Docket No. 04-233 (filed April 28, 2008) at Attachment B.

⁴⁶ Stephen Waldman, Public Interest and the Media in the Digital Age, (Dec. 17, 2009), available at <http://blog.broadband.gov/?authorId=18601>.

spectrum to pay wireless services. The Framework Document discusses the benefits of broadcasting in more detail at Section I.

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These questions and the MSTV/NAB responses are insufficient to discharge the Commission's responsibilities with respect to the important issues at stake in the broadband proceeding. Accordingly, MSTV and NAB are concurrently filing "Broadcasting and the Broadband Future: A Framework for Discussion," which along with its various attachments (including a Technical Review), lays out a more complete and balanced approach for addressing these issues. The Framework Document is also attached to these Comments. MSTV and NAB intend to provide further information in support of the Framework Document and these Comments.

Respectfully submitted,

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December 22, 2009

Attachment: Broadcasting and the Broadband Future: A Proposed Framework for Discussion