Hearing on H.R. 3125, the "Radio Spectrum Inventory Act," and

H.R. 3019, the "Spectrum Relocation Improvement Act of 2009"

United States House of Representatives

Subcommittee on Communications, Technology and the Internet

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Statement of Senator Gordon H. Smith

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National Association of Broadcasters

Good morning, Chairman Boucher, Ranking Member Stearns and members of the committee, and thank you for inviting me to testify today. My name is Gordon Smith, and I am President and CEO of the National Association of Broadcasters ("NAB"). NAB is a nonprofit trade association that advocates on behalf of thousands of local radio and television stations and broadcast networks before Congress, the Federal Communications Commission ("FCC") and other federal agencies, and the Courts.

I am grateful for the opportunity to speak with you today as you consider legislation that would require an inventory of radio spectrum bands managed by the National Telecommunications and Information Administration ("NTIA") and the FCC. NAB believes that a comprehensive inventory – including spectrum allocated for Federal government use – would serve the public interest. It would facilitate efforts to foster the longstanding policy goal of maximizing spectrum efficiency.

A complete inventory and analysis of spectrum usage also would inform the current debate over spectrum needs, and help policymakers to determine whether steps towards fostering greater spectrum efficiency – such as tightening service deployment deadlines for wireless licensees, or streamlining wireless licensing processes to get services to the public faster – are appropriate at this time. Additionally, this inventory will demonstrate the high efficiency and unparalleled public benefits of the use of spectrum for free, over-the-air broadcasting. Broadcast services are a critical part of a national communications infrastructure that includes wired and wireless broadband services, wired and wireless voice services, and non-broadcast audio and video services. Free, over-the-air television and radio broadcast stations provide valuable services to the American people. Our national priorities and public policies should

continue to recognize the value that both free, over-the-air broadcasting *and* broadband can bring to every American.

I. Introduction

The ultimate beneficiaries of sound spectrum management are consumers who rely upon services delivered over the spectrum resource. For more than eight decades, radio and television broadcasters have provided a free, over-the-air service to virtually every household in America, keeping local communities –your constituencies – informed and connected. Local broadcast stations provide a wealth of local news and public affairs programming, political information, vital emergency information and entertainment. Broadcasters provide unique community service (including billions of dollars annually of free air time for public service announcements and monies raised for charities, other local organizations and causes, and needy individuals). Broadcasting is synonymous with the public interest.

The recent transition to digital television ("DTV") highlights the benefits of sound spectrum management. Multi-billion dollar investments by broadcast television stations, equipment manufacturers, the government, and consumers have enabled the intensive use of each television station's 6 MHz channel to deliver a variety of high definition ("HD") and multicast programming, mobile DTV, and other ancillary and supplemental services — all while freeing up more than 100 MHz of spectrum for wireless broadband and other new commercial and public safety uses.

NAB recognizes that universal broadband also has the potential to generate substantial public interest benefits as a part of the communications ecosystem. Broadcasting and broadband are both valuable services that will continue to provide

significant benefits to the American people if appropriate principles guide public policy decisions. Broadcasting and universal broadband do not represent opposite choices or an "either-or" proposition for policymakers and the public.

II. Public Policy Should Promote the Availability of Both Broadband *and* Broadcast Services

In assessing the efficiency and value of a current use of spectrum, a premium should be placed on public policy goals that are served by that use. Broadcast television promotes core public interest goals though local journalism, timely and reliable provision of emergency information, educational programming and other valued local programming. Broadcast stations also generate significant economic activity in their local communities by, inter alia, hiring employees from the community (who then spend their wages and salaries in the community), by purchasing all manner of equipment, supplies and materials from local businesses, and by providing an outlet on which other local and regional businesses advertise in order to increase their own sales, profits and, ultimately, employment. Those who would assign arbitrary financial value to a reallocation (either in terms of the revenue that may be obtained at auction or the revenue that a new licensee may earn through sale of services over that spectrum) are asking policymakers to ignore the significant public interest value that free, over-the-air broadcast service provides. Such an approach is inconsistent with the statutory requirement that allocation decisions be dictated by public interest considerations.[1]

[1] *See* 47 U.S.C. § 303(c) (requiring that allocation decisions be based upon findings of "public interest, convenience, or necessity"). Moreover, the FCC is prohibited from considering amounts that may be raised at auction in making public interest findings about allocations. *See* 47 U.S.C. § 309(j)(7)(A) ("In making a decision … to assign a band of frequencies to a use for which licenses or permits will be issued … the Commission may not base a finding of public interest, convenience, and necessity on the expectation of Federal revenues from the use of a system of competitive bidding under this subsection.").

A. Innovation and Efficiency Drive Broadcast Operations

Over the past several decades, the nation's television broadcast service has made substantial advances in spectrum efficiency, all while continuing to provide a free, universal service that uniquely serves the local interests of the public. In the past, each television station delivered a single, analog programming stream over a 6 MHz channel. Today, broadcasters use the same 6 MHz channels to deliver multiple streams of programming, including in HD format. Broadcast television has gone from standard quality video and stereo sound to the highest quality widescreen theater quality pictures and multi-channel Dolby surround sound. The transmission standard for digital television provides wide-area coverage at a data rate of almost 20 Mbps within a 6 MHz channel, making it one of the most efficient transmission systems available for disseminating high bit-rate content to a wide audience. Broadcasters generate tremendous efficiencies through their ability to serve "one-to-many" in small bandwidth segments – efficiencies that cannot otherwise be achieved. Indeed, with each additional viewer, a broadcaster's use of spectrum becomes more efficient, because increasing the number of viewers places no additional incremental burden on the spectrum. Moreover, unlike many mobile services, each television station transmits over its entire spectrum allotment during all or virtually all of the day; there are not peaks and valleys in transmissions during which spectrum is unutilized or underutilized.

While the advances in quality and quantity of programming services represent a substantial gain in efficiency of spectrum use, broadcasters are poised to do even more with their existing spectrum assignments, offering new services like mobile DTV to complement existing programming streams. In October 2009, the Advanced Television

Systems Committee ("ATSC") announced the adoption of the A/153 ATSC Mobile DTV Standard, which will enable broadcasters to deliver mobile DTV products and services. Adoption of this standard was the culmination of three years of intensive research, development and testing. As ATSC explained in announcing adoption of the standard, "the ATSC Mobile DTV Standard will enable broadcasters to provide new compelling services to consumers using a wide array of wireless receiving devices including mobile phones, small handheld DTVs, laptop computers and in-vehicle entertainment systems."[2]

Broadcasters also are working with innovators to provide even better service to the public. For example, a new company called Sezmi is introducing a service that seamlessly blends over-the-air broadcast and broadband video options. Sezmi, which is selling its high-capacity set-top box in select markets today, plans a major roll-out within the next year. In addition to using over-the-air broadcast video, Sezmi has also negotiated arrangements with some local broadcasters to lease and aggregate spectrum in local markets, using that spectrum to deliver high-demand video product – product that might otherwise overwhelm a traditional IP network – to customers so that it can be played back at any time. Importantly, these services will be provided over stations' *existing* spectrum assignments, further increasing the efficiency of the nation's over-the-air television service. In addition, the Sezmi system makes broadband services available to users via an Internet connection, delivering niche content and enhancements to the program content delivered over-the-air. As an indicator perhaps for the wave of the future, the Sezmi system demonstrates the beginnings of the

[2] Press Release, *ATSC Adopts Mobile Digital TV Standard*, Oct. 16, 2009, *at* http://www.atsc.org/communications/press/2009-10-16-ATSC_approves_mobile_dtv.php. *See* Attachment A.

profound synergy of seamlessly integrating broadcast and broadband delivery mechanisms for a an overall richer consumer media experience.

In fact, efficiency gains in television broadcasting have been accompanied by a *reduction* in the total allocation of spectrum to broadcast television, most recently through reallocation of over 25 percent of spectrum (over 108 MHz) allocated to broadcasting at the conclusion of the DTV transition. Today, television broadcasting uses approximately 60 percent of the spectrum that it used in the 1970s,[3] yet has managed to provide a four-fold improvement in the audio and video quality of its service. With the conclusion of the DTV transition, broadcast television is the first wireless service ever to substantially reduce its spectrum use while providing additional services.

The efficiencies realized by broadcasting should be considered and acknowledged by policies governing spectrum management. Moreover, spectrum management policy should continue to recognize the value of new, innovative services being developed by broadcasters, and should not deprive the public of these services and/or force them to pay for similar services that may one day be offered by the wireless, satellite or cable industries.

B. Public Service Is Part of What Makes Broadcasting Unique Among Communications Services

[3] Spectrum accommodations in which broadcasters have participated include vacating of television channel 1, then of television channels 70 through 83, and most recently of television channels 52-69 and the ensuing repacking of digital channels into the core television spectrum below channel 52. In addition, broadcasters are vacating 35 MHz of spectrum in the 2 GHz band through digital conversion of Broadcast Auxiliary Service equipment. These and other steps have accommodated commercial wireless 4G networks, mobile satellite services, land mobile communications, broadband public safety networks, and low power television services, among others.

As local broadcasters have demonstrated on many occasions, stations serve the public interest by airing local and national news and public affairs programming and a variety of other programming that serves the needs and interests of their audiences, including sports, religious and other community-oriented programming. In addition to providing a mix of news, information and entertainment programming relevant to their local communities, television and radio broadcast stations also must meet a variety of other public interest obligations.[4] Through participation in the Emergency Alert System ("EAS") and additional coverage of natural disasters and other emergencies, broadcasters help save lives with extensive, timely emergency information. Coordination with local law enforcement via Amber Alerts has led to the recovery of 467 abducted children. No other communications service provides this tremendous level of service to communities across the country.

Unlike many commercial wireless services, in the television broadcast service, licensees already operate under a host of regulations to ensure that their use of the spectrum is fully utilized to maximize its total value. In the broadcasting context, the "total value" is not a strict financial measure, but rather is one that encompasses the broader public policy objectives such as universal service, local journalism and public safety. The rules designed to ensure maximization of the "value" of broadcast spectrum range from technical matters such as signal coverage requirements to substantive programming obligations, such as the requirement to air programming meeting the

[4] *See, e.g.,* 47 U.S.C. § 315(a) (requiring a station to offer equal opportunity to all candidates for a public office to present views, if station affords an opportunity to one such candidate); 47 C.F.R. § 73.1211 (regulating stations' broadcast of lottery information/advertisements); *id.* § 73.1212 (requiring identification of program sponsors); *id.* § 73.1216 (providing disclosure requirements for contests conducted by a station); *id.* § 73.3526(a) (requiring maintenance of a file available for public inspection); *id.* § 73.3526(e)(11)-(12) (requiring a quarterly report listing the station's programs providing significant treatment of community issues); *id.* § 73.671 (children's television programming requirements).

educational and information needs of children. Compliance with these requirements is taken into account at license renewal. Thus, in contrast to commercial wireless services,[5] the regulatory structure for broadcast television already is designed to maximize value of the spectrum resource.

Evaluation of the "value" of a given use of spectrum must also take into account investment in equipment and services provided over the band. In the context of television broadcasting, a significant amount of this value is in the form of investment by ordinary consumers. Consumers in 2009 have spent over $25 billion in HDTV receivers.[6] Additionally, consumers, with the support of a government subsidy, have spent billions of dollars converting their television equipment to digital, redeeming nearly than 35 million coupons for digital-to-analog converter boxes. Assuming an average price of $60 per converter box, this represents an investment of more than $2 billion in converter boxes alone — premised on the notion that consumers with these converter

[5] While some commercial wireless services are subject to construction deadlines or similar mandates intended to foster efficient use of spectrum, these obligations are considerably less stringent than those applied in the broadcast context. For example, in most wireless services, the buildout requirement is to provide one of the following within 5-10 years of the date of licensing: (i) substantial service (defined as "service that is sound, favorable, and substantially above a level of mediocre service that would barely warrant renewal"); *or* (ii) service to a specified percentage of the population in the licensee's geographic coverage area. A wireless licensee that does not expect to meet the applicable deadline may request an extension, 47 C.F.R. § 1.946(e), and/or seek a waiver of the buildout requirements, 47 C.F.R. § 1.925. Multi-year extensions affecting nearly all of the licensees in certain wireless services have been approved. *See Consolidated Request of the WCS Coalition for Limited Waiver of Construction Deadline for 132 WCS Licenses; Request of WCS Wireless, LLC for Limited Waiver of Construction Deadline for 16 WCS License*s, 21 FCC Rcd 14134 (2006) (extending construction deadlines by three years, until 2010); *Wireless Telecommunications Bureau Seeks Comment on Applications Filed by Licensees in the Local Multipoint Distribution Service (LMDS) Seeking Waivers Of Section 101.1011 of the Commission's Rules and Extensions of Time to Construct and Demonstrate Substantial Service*, 23 FCC Rcd 5894 (2008) (extending the LMDS construction deadline until 2012). By contrast, broadcast licensees must construct and be prepared to operate their stations and comply with applicable signal coverage obligations within a three-year window. 47 C.F.R. § 73.3598(a). Tolling of the construction period will not be approved unless the broadcaster can meet a heightened waiver standard (i.e., by demonstrating that an "act of God," pending litigation, or pending international coordination prevented completion of construction). 47 C.F.R. § 73.3598(b).

[6] *See, e.g.*, David Goetzl, *Big Picture: HDTV Sales on Upswing*, MEDIAPOST NEWS, Sept. 29, 2009, *available at*: http://www.mediapost.com/publications/?fa=Articles.showArticle&art_aid=114483 (citing estimates of SNL Kagan).

boxes would continue to receive free, over-the-air television, including new multicast services. These investments by consumers are in addition to the many billions of dollars spent by local television stations in connection with the transition to digital television. Public policy should reject spectrum reallocation proposals that would strand substantial investments by consumers in receiving equipment and/or leave consumers without access to free broadcast service upon which they regularly rely.

III. To Promote Universal Broadband Availability and Adoption, Public Policy Should Encourage Efficient, Productive Use of Spectrum Already Allocated for Wireless Broadband and Also Should Promote Wired Alternatives

NAB has acknowledged the importance of broadband in a variety of contexts. We believe that broadcast operations and the expansion of broadband availability and adoption are by no means mutually exclusive. To the contrary, we have previously identified three key points policymakers should keep in mind when trying to promote broadband access while still preserving for the public the benefits of free, over-the-air broadcasting: (i) considering *all* frequencies that may be suitable for wireless broadband in developing an accurate assessment of spectrum suitable for broadband; (ii) prioritizing the efficient use of spectrum already allocated and suitable for wireless broadband; and (iii) maintaining an awareness of the limitations of wireless solutions as compared to wired solutions.[7]

As we explained in comments filed with the FCC, any bias in favor of using frequencies below 3.7 GHz for broadband will fail to generate an accurate assessment

[7] *See* Comments of the Association of Maximum Service Television and the National Association of Broadcasters in response to NBP Public Notice #6, GN Docket Nos. 09-47, 09-51, 09-137, DA 09-2100 (filed Oct. 23, 2009).

of available spectrum for broadband.[8] Indeed, the FCC has allocated spectrum for a variety of wireless services, including broadband applications, on frequencies above 3.7 GHz (*e.g.*, the unlicensed allocation in the 5.7 GHz band). Policymakers seeking solutions should consider *all* frequencies that may be suitable for wireless broadband based on their technical characteristics and other relevant factors. The spectrum inventory contemplated by the proposed legislation will facilitate these solutions.

Second, those seeking to promote universal broadband should seek to ensure the efficient use of spectrum already allocated and suitable for wireless broadband. In recent years, a significant amount of exclusively licensed spectrum has been repurposed in anticipation of the spectrum needs of the commercial wireless industry. Owing to a host of variables, many of these bands have only just begun to be put into use. Significant spectrum for broadband is available even if one were to accept the incorrect notion that wireless broadband deployment depends upon access to spectrum below 3.7 GHz. The following exclusively licensed spectrum bands below 3.7 GHz will provide for significant, new wireless broadband deployment by commercial providers in the coming years: (i) the lower 700 MHz band (48 MHz); (ii) the upper 700 MHz band (34 MHz); (iii) spectrum in the L-band (46 MHz), Big Leo (19 MHz) and 2 GHz (40 MHz) bands allocated for mobile satellite service ("MSS")/ancillary terrestrial component

[8] *See, FCC, Comment Sought on Spectrum for Broadband*, NBP Public Notice #6, GN Docket Nos. 09-47, 09-51, 09-137, DA 09-2100 (rel. Sept. 23, 2009) ("Notice"). In the Notice, the FCC characterized spectrum below 3.7 GHz as "prime spectrum bands." As discussed herein and in comments filed with the FCC, other spectrum also is appropriate for wireless broadband services and should be considered as part of efforts to enhance broadband deployment and adoption.

("ATC"); and (iv) the Advanced Wireless Service ("AWS") bands—AWS-1, 2, and 3 (130 MHz).[9]

Thus, a total of *more than 500 MHz of spectrum* already is allocated for wireless broadband services. Notably, this spectrum is in addition to the substantial amount of unlicensed and "licensed-lite" spectrum that has been made available for broadband. For example, in 2005 the FCC adopted rules to make nationwide licenses for wireless broadband available on a non-exclusive basis in the 3650-3700 MHz band.[10] That band, however, has yet to be put into intensive use for wireless broadband. An additional 109.5 MHz of spectrum that is suitable for wireless broadband is currently allocated for unlicensed use in bands below 3.7 GHz. In the nearby 5.7 GHz band, another 125 MHz of unlicensed spectrum is allocated and suitable for wireless broadband. Altogether, these unlicensed spectrum allocations provide 284 MHz of spectrum suitable for wireless broadband.[11] This is a total of *784 MHz* of licensed and unlicensed spectrum allocations suitable for wireless broadband. Moreover, this total does not include the spectrum that may become available as a result of the FCC's decision to allow the use of unlicensed devices in the television broadcast bands.[12] It also does not include another 30 MHz of spectrum licensed more than a decade ago in

[9] A chart describing some of the available spectrum for wireless broadband below 3.7 GHz is attached hereto. *See* Attachment B.

[10] *See Wireless Operations in the 3650-3700 MHz Band,* Report and Order and Memorandum Opinion and Order, 20 FCC Rcd 6502 (2005).

[11] The following bands are currently allocated for unlicensed or "licensed lite" operation: 902-928 MHz, 2400-2483.5 MHz, 3650-3700 MHz and 5700-5825 MHz.

[12] *See Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, Second Report and Order and Memorandum Opinion and Order, 23 FCC Rcd 16807 (2008).

the 2.3 GHz band, the Wireless Communications Service ("WCS"), which also is suitable for wireless broadband services.[13]

In addition to making use of spectrum that has recently been made available for wireless broadband, wireless licensees can add capacity for broadband by improving the technology, architecture and system design currently deployed over their legacy spectrum bands. History has shown that the deployment of more efficient technology has the potential to provide a meaningful increase in the capacity per unit of spectrum available to a wireless licensee. According to AT&T Inc., although having had until recently "only a fraction of spectrum available in other industrialized countries," commercial wireless providers in the U.S. "serve more customers and carry vastly more traffic" than providers in other countries.[14]

Despite the gains that the commercial wireless industry has made in spectrum efficiency over the years, it is clear that additional and substantial gains are possible.[15] A 2004 study sponsored by the National Science Foundation found that less than 20 percent of the frequency bands below 3 GHz were in use over the course of a business

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[13] Licenses for WCS band (2305-2320 and 2345-2360 MHz) were awarded in 1997. *See Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service*, Report and Order, 12 FCC Rcd 10785 (1997). Citing concerns about regulatory uncertainty over the operation of satellite digital audio radio service terrestrial repeaters in adjacent bands, several WCS licensees requested and obtained a three-year extension of the deadline to comply with the substantial service requirement. *See Consolidated Request of the WCS Coalition for Limited Waiver of Construction Deadline for 132 WCS Licenses; Request of WCS Wireless, LLC for Limited Waiver of Construction Deadline for 16 WCS Licenses*, 21 FCC Rcd 14134 (2006) (extending construction deadlines by three years, until 2010). Thus, the public has yet to realize any benefit from the licensing of this spectrum.

[14] *See, e.g.*, Comments of AT&T Inc., GN Docket Nos. 09-51, 09-157, at 78-79 (Sept. 30, 2009).

[15] The closed-architecture nature of most commercial wireless systems, in which the licensee has control both over the transmission and reception equipment, facilitates equipment-based gains in efficiency. In contrast, in open-architecture systems, such as broadcast television, the licensee (i.e., television station) has no control over the reception equipment (i.e., digital television receivers, digital-to-analog converter boxes) used by consumers.

day.[16] In addition to peaks and valleys in spectrum use throughout the day, wireless licensees in some cases do not serve the entire area covered by their licenses; this situation is especially prevalent in rural areas. Such practices may need to change to ensure that wireless licensees are making full use of the public's spectrum resource. In any event, given these efficiency concerns, it would be premature at best to increase the allocation of spectrum to commercial wireless uses by 300 percent over the current allocation, as some parties have recently suggested.[17] Targeting instead a 300 percent increase in efficiency of existing wireless spectrum use – which broadcasters already have achieved – would be a more appropriate exercise.[18]

Fixed wireless broadband access can be provided efficiently over higher-frequency spectrum, such as that widely available in the 5 GHz band and as high as the 70/80/90 GHz band. Because of their shorter propagation characteristics, these higher-frequency bands may be less desirable for some mobile applications or other services (like broadcasting) for which the location of receiving equipment is unknown and subject to change. Yet in the case of a fixed service, the location of both the transmitting antenna and the receiving antenna is known to the broadband provider — making it possible at all times to achieve line of sight between the two antennas. Moreover, these

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[16] *See* Comments of the New America Foundation et al., GN Docket No. 09-51, at i (June 8, 2009). Notably, broadcast television stations transmit across their entire 6 MHz channel allotments on a continuous basis; thus, broadcasters' spectrum assignments are not subject to the peaks and valleys that leave spectrum assigned to many wireless services underutilized at points in the day.

[17] *See, e.g.*, Comments of CTIA - The Wireless Association, GN Docket Nos. 09-175, 09-51, at 73 (Sept. 30, 2009) (asserting that, in addition to the approximately 450 MHz of spectrum already allocated to terrestrial wireless services, the U.S. government should "launch an effort to identify and allocate at least 800 MHz of additional spectrum for licensed commercial wireless use within the next six years").

[18] The recently-concluded transition to digital television also highlights the benefits of investing in spectral efficiency. Through the multi-billion dollar transition to digital television, broadcasters increased throughput over each television station's 6 MHz channel by 400 or 500 percent. These gains in efficiency have enabled broadcasters to launch, among other new services, a new mobile DTV service. At the same time, broadcasters decreased by 25 percent their use of spectrum.

shorter propagation characteristics allow for more efficient cell sites and spectrum re-use.

Finally, while wireless platforms clearly have a role in the national broadband plan, they should not be viewed as the sole – or even the primary – platforms for providing broadband throughout the nation. Wireline methods of delivering broadband access, such as fiber to the home, are not subject to the throughput limitations that will naturally affect wireless broadband systems. In evaluating the best possible means to increase broadband availability and adoption, policymakers should also utilize wireline service.

IV. Spectrum in the Broadcast Band Can Foster Rural Broadband Deployment

As NAB has repeatedly advocated, use of "white spaces" spectrum between television channels for fixed licensed broadband in rural areas is a way to improve broadband access.[19] If engineered properly, the white spaces presumably could have a role as well for backhaul in these areas. Because the broadcast bands are used less intensively in rural markets, with appropriate technical protections fixed broadband services can operate in this spectrum without undermining consumers' access to free, over-the-air digital television or new mobile DTV services.[20] Other parties that have addressed white-space use in connection with the FCC's National Broadband Plan have

[19] *See, e.g.*, Joint Reply Comments of MSTV and NAB, ET Docket Nos. 04-186 and 02-380, at 5 (March 2, 2007) (supporting the introduction of fixed devices into the TV white spaces to "provide new broadband services, especially to rural and underserved areas of the United States"); Letter from David Donovan, MSTV and Jane Mago, NAB, GN Docket No. 09-51 (July 21, 2009).

[20] These protections include a prohibition on operation in the channels immediately adjacent to an occupied television channel (the "first adjacent channels"). *See Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, Second Report and Order and Memorandum Opinion and Order, 23 FCC Rcd 16807, 16812 ¶ 10 (2008).

noted its utility in rural areas.[21] The Canadian government has likewise authorized licensed use of television spectrum for broadband in "rural and remote" areas. That decision similarly reflects the fact that, unlike in urban and suburban areas, in rural areas there is typically sufficient white-space spectrum for fixed broadband use, including for backhaul purposes.[22]

Aside from the many technical advantages of authorizing licensed use of television spectrum for broadband in rural/remote areas, there is also a practical advantage in that it can bring a solution to market very quickly. Proposals involving reallocation or repacking of broadcast and/or other spectrum could involve years of administrative rulemaking activity to determine exactly how specific bands should be used, the establishment of service rules for various bands, adoption of relocation rules and procedures and eventually an auction. Completion of an auction is only the beginning of yet a new set of administrative processes including FCC review of "long form" applications to evaluate the qualifications of winning bidders, collection of payments and then license grant. This final step only means that Americans may receive new or expanded services several years down the road, because FCC rules generally only require wireless licensees to offer services to portions of their coverage areas within five or ten years of license grant.[23] Accordingly, if a near-term solution to

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[21] *See, e.g.*, Comments of Public Knowledge, Media Access Project, the New America Foundation, and U.S. PIRG, GN Docket No. 09-51, at 32 (June 8, 2009) ("Rural areas would have more white spaces compared to urban regions due to presence of fewer broadcasting channels there"); Comments of Wireless Communications Association International, GN Docket No. 09-51, at 47 (June 8, 2009).

[22] *See* Interim Technical Guidelines for Remote Rural Broadband Systems Operating in the Band 512-698 MHz (TV Channels 21-51), Industry Canada (rel. March 2007).

[23] *See, e.g.*, 47 C.F.R. § 22.503 (within five years of license grant, paging licensees must construct and operate facilities covering two-thirds of the population in their geographic service areas or demonstrate substantial service); 47 C.F.R. § 24.103 (within 10 years of license grant, nationwide narrowband PCS licensees must construct base stations covering a specified geographic area, serve 75 percent of the U.S.

the lack of broadband services in rural areas is desired, policymakers should pursue solutions that can and will be implemented in a timely manner.

V. Conclusion

Congress is appropriately interested in ensuring efficiency in the way that the nation's public airwaves are allocated, licensed and utilized. A comprehensive, objective examination of spectrum allocation and usage is a worthwhile endeavor that could go a long way towards promoting the efficient use of spectrum. Such an analysis will demonstrate that broadcasters continue to be efficient custodians of a segment of our nation's airwaves. Public policies should reflect that the unique, locally-oriented services provided by broadcasters are a critical component of our nation's communications infrastructure. Broadcasters are continually innovating and expanding the kinds of programming and services available to viewers. The value that broadcasting has brought to the American people for decades should continue to complement other spectrum-based offerings, including broadband. Spectrum management policies should encourage wireless licensees to make efficient and productive use of spectrum already allocated and assigned.

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population, or demonstrate substantial service); 47 C.F.R. § 24.203 (within 10 years of license grant, broadband PCS licensees holding 30 MHz blocks must operate with a signal level sufficient to provide adequate service to at least two-thirds of the population in their licensed area or demonstrate substantial service); 47 C.F.R. § 101.1011 (within 10 years of license grant, local multipoint distribution service licensees must demonstrate substantial service). If an extension of the construction period is not granted and construction deadlines are not met by a licensee, FCC rules provide that the licensee's authorization automatically terminates. *See, e.g.,* 47 C.F.R. § 1.946(c).