

How the Traditional Property Rights Model Informs the Television Broadcasting Spectrum Rationalization Challenge

by

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I. Executive Summary

In March 2010, the FCC released the National Broadband Plan, an initiative to dramatically increase broadband access for U.S. consumers. As part of the plan, the FCC articulated a desire to reallocate large amounts of electromagnetic spectrum to mobile broadband use. The FCC’s desire to reallocate spectrum from existing uses raises significant questions about the rights of the existing FCC license holders of that spectrum.

The largest block of potentially available spectrum that is economically and technologically viable to reallocate to mobile broadband use is the 294 Mhz allocated to broadcast television. Regulators find the potential reallocation of broadcast television spectrum appealing insofar as this spectrum is relatively inefficiently used. Approximately 90% of U.S. households do not receive their broadcast television programming through the broadcast spectrum, but instead from cable, satellite, or an increasing variety of Internet-based services. Moreover, only 17% of the television broadcasting spectrum is used nationwide. As a result, the government seeks to reacquire 120 Mhz of the broadcasters’ 294 Mhz and redeploy it for mobile broadband applications.

Legal claims to property rights in the spectrum are highly tenuous, likely allowing the government to reclaim the broadcasters' spectrum without compensation at the end of their license periods. Nevertheless, the government has announced several times that it plans to conduct the transition of television broadcast spectrum on a voluntary basis. This decision is based on a variety of political and strategic considerations that compel the government to seek an equitable solution. However, to the extent the process is indeed voluntary—that the broadcasters will not be forced to give up their licenses—the government is essentially recognizing even greater possession rights for the broadcasters than owners of private property traditionally enjoy. Typically, owners of private property are subject to government seizure for public benefit in return for market-rate compensation for their loss.¹ Voluntary return of spectrum, however, would put the broadcasters in a better position as the government is suggesting they will have the opportunity to reject the government's proposed compensation.

In any event, treating the spectrum rights as having elements of private property raises questions about how the government will compensate the broadcasters for their loss of spectrum rights. In determining appropriate compensation, the government may adopt principles from rezoning and eminent domain actions. If the government cannot reach a voluntary settlement with the broadcasters, it will likely have to turn to traditional takings strategies whereby the government takes control of private property on a non-voluntary basis. Insofar as rezoning and eminent domain are the government's "next best option" to a voluntary deal, these principles will likely provide a significant backdrop to the negotiation process to obtain a voluntary agreement.

Although zoning would potentially allow the government to acquire the broadcasters' licenses at low rates, it is also problematic. If the government simply "rezones" the broadcasters' permitted use of their spectrum license from television to mobile broadband, the broadcasters will undoubtedly argue that they are entitled to the new zoning rights. If the broadcasters were to prevail on this argument,

1. Despite the numerous announcements from various government sources that the spectrum reallocation process would be voluntary for television broadcasters, the extent to which the process will actually be completely voluntary is still somewhat murky. In order to obtain large swaths of contiguous nationwide spectrum, and deal with holdout broadcasters in certain markets, the government will likely need to force certain broadcasters to give up their spectrum in some markets. This point is likely to be a highly contentious part of any plan to reacquire broadcasters' spectrum.

they would obtain the entire benefit from the conversion, leaving no benefit for the U.S. taxpayers. On the other hand, if rezoning simply prevents the broadcasters from using their spectrum for broadcasting purposes, they would lose all return on their investment in their licenses. The government could also reduce the broadcasters' license rights via "downzoning" the spectrum to limit its use without compensation. Any of these zoning approaches would likely result in an extreme result favoring one side, most likely the government, as opposed to an equitable incentive process balancing the competing interests of the broadcasters and society as a whole.

However, eminent domain may be an efficient and principled method of reallocation that provides a viable framework for negotiating a buyout price for the television broadcasters. Under the eminent domain approach, the government would purchase the broadcasters' licenses at the fair market value of the loss it causes their current businesses. The loss to broadcasters could be largely mitigated if the FCC is able to overcome potential First Amendment challenges and grants the foreclosed broadcasters permanent transmission rights for their content on cable and satellite platforms. For a relatively modest sum, the government could provide the 10% of viewers in affected areas currently relying on over-the-air broadcasting with a subsidized cable or satellite television subscription consisting of only the local broadcast channels to minimize loss of television access for current over-the-air viewers.

A well-crafted eminent domain strategy would not only compensate television broadcasters for their economic losses, but would also allow them to remain in business and continue to serve their local communities with their content, thus also minimizing disruption to consumers. The threat of rezoning, meanwhile, provides the government with a "stick" to encourage the broadcasters to agree to reasonable terms to vacate their spectrum. After compensating the broadcasters for their partial business loss of the 10% of viewers they reach with over-the-air transmission, the government would be able to re-auction the broadcasters' spectrum for higher-value mobile broadband usage. It would realize a net profit of approximately \$28.5 to \$38.3 billion after compensation to the broadcasters and subsidized cable or satellite subscriptions for affected viewers. In addition, this reallocation would provide the bandwidth needed to unleash a huge expansion of mobile broadband in the United States and all of the accompanying social and economic benefits, which some economists estimate to be many multiples of the value of the spectrum itself.

Although well-settled eminent domain law prevents payments based on the increase in the value of the property for the government's higher-value intended future use, political pressures may push the government to offer compensation to broadcasters somewhat beyond the current market value of television broadcast use. In addition, the threat of rezoning the broadcasters' rights may help constrain the upper boundary of any settlement to the broadcasters. In this way, rezoning and eminent domain principles may both inform the negotiations and help provide an equitable outcome for the broadcasters and the U.S. taxpayers while preserving incentives for communications operators to invest in FCC licenses and build out of new services.

II. Introduction

Demand for mobile broadband applications is soaring,² and the FCC, which allocates spectrum for specific applications, believes that more spectrum should be allocated for this purpose.^{3, 4} This conclusion is widely supported by industry observers. As part of the recently released National Broadband Plan, the FCC is seeking to reallocate 300 Mhz of spectrum over the next five years, and 500 Mhz by 2020, to mobile broadband applications. Some industry observers advocate even larger amounts.⁵ Many economists point to a multiplier effect where the social and economic benefits of broadband deployment are many times the value of the project itself.⁶ The

2. Cisco predicts a twenty six fold increase in mobile data traffic between 2010 and 2015. *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2010–2015*, CISCO (Feb. 2011), http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.html.

3. David Gardner, *FCC Chair Cites 'Spectrum Crisis'*, INFO. WEEK (Oct. 7, 2009), http://www.informationweek.com/news/government/mobile/220301552?cid=nl_IW_daily_html [hereinafter *Spectrum Crisis*].

4. In a speech on September 27, 2011, FCC Chairman Julius Genachowski said, "The spectrum crunch is the single biggest threat to one of the most promising parts of our economy. There's much we need to do to free up spectrum for mobile broadband . . ." Grant Gross, *Citigroup Questions Whether U.S. Spectrum Shortage Exists*, COMPUTER WORLD (Sept. 30, 2011), http://www.computerworld.com/s/article/9220436/Citigroup_questions_whether_U.S._spectrum_shortage_exists?source=rss_networking&utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+computerworld%2Fs%2Ffeed%2Ftopic%2F16+%28Computerworld+Networking+News%2.

5. CTIA paper suggested 800 Mhz is needed. *See Comments of CTIA—The Wireless Association NBP Public Notice #6*, CTIA.ORG (Nov. 13, 2009), at 2, http://files.ctia.org/pdf/filings/091023_CTIA_Comments_NBP_PN.pdf.

6. Thomas W. Hazlett & Roberto E. Munoz, *A Welfare Analysis of Spectrum Allocation Policies*, George Mason Law & Economics Research Paper No. 06-28, (2008), available at <http://ssrn.com/abstract=908717> [hereinafter *Hazlett & Munoz*].

National Broadband Plan warns that failure to address spectrum availability issues will lead to “higher prices, poor service quality, an inability for the United States to compete internationally, depressed demand and, ultimately, a drag on innovation.”⁷

Numerous studies have documented the current inefficient allocation of electromagnetic spectrum in the United States. Nationwide, only about 17% of the available channel capacity in the current allocation of 294 Mhz of VHF⁸ and UHF⁹ spectrum to television broadcasters^{10, 11} is used for television broadcasting.¹² Moreover, over 90% of consumers subscribe to cable or satellite television services, leaving less than 10% of viewers exclusively watching over-the-air television broadcasts. Thus, 294 Mhz of valuable spectrum is dedicated for limited use (17% of the available channel capacity, used by 10% of the population).^{13, 14} As part of the

7. *National Broadband Plan: Chapter 5 - Spectrum*, BROADBAND.GOV, at 2–3, www.broadband.gov/plan/5-spectrum [hereinafter *Spectrum*].

8. VHF television broadcasting frequencies: 54–72 Mhz (channels 2–4); 77–88 Mhz (channels 5–6); 174–216 Mhz (channels 7–13).

9. UHF television broadcasting frequencies: 470–698 Mhz (channels 14–69; except channel 37 between 608 and 614 Mhz, which is reserved for radio astronomy use). Prior to June 2009, when television broadcasters converted to digital broadcasting and the channels were “repacked,” the UHF band extended from 608 to 800 Mhz. The frequencies 698 to 800 were used for channels 52–69. The 698–800 Mhz spectrum was auctioned in 2008–2009 in an auction dubbed “The 700 Mhz Auction” officially known as “Auction 73.” Until the 1980s, channels 70 through 83 existed and utilized 806–884 Mhz.

10. Phil Bellaria, Adam Gerson & Brian Weeks, *Spectrum Analysis: Option for Broadcast Spectrum*, OBI Technical Paper No. 3, BROADBAND.GOV, at 7 (June 2010), [http://download.broadband.gov/plan/fcc-omnibus-broadband-initiative-\(obi\)-technical-paper-spectrum-analysis-options-for-broadband-spectrum.pdf](http://download.broadband.gov/plan/fcc-omnibus-broadband-initiative-(obi)-technical-paper-spectrum-analysis-options-for-broadband-spectrum.pdf) [hereinafter *OBI Technical Paper No. 3*].

11. For comparison, the entire AM radio band occupies 1.2 Mhz of spectrum. See Robert M. Rast, *The Dawn of Digital Television*, INSIDE SPECTRUM TECH. (Oct. 2005), <http://spectrum.ieee.org/consumer-electronics/audiovideo/the-dawn-of-digital-tv>.

12. Thomas W. Hazlett, *Unleashing the DTV Band: A Proposal for an Overlay Auction*, NBP PUBLIC NOTICE 26, at 5–6 (Dec. 18, 2009), <http://iep.gmu.edu/event/unleashing-dtv-band-proposal-overlay-auction-comment-nbp-public-notice-26> [hereinafter *Hazlett*]. Hazlett’s calculation is 49 channel slots in 210 markets, or 10,290 available channels exist, but only 1,750 full power television stations are licensed.

13. This unused “white space” is not contiguous and varies significantly by market.

14. The “Spectrum” report (*Spectrum*, *supra* note 6, at 7) includes a table valuing the over-the-air subscribers as 14% to 19% of broadcasters’ total audience. However, the widely accepted figure is close to 10% or less, which also matches Exhibit A on page 7 of the same report citing a Nelson’s estimate. This seems to reflect the influence of the broadcasting industry. While the broadcasting industry does not dispute that over 90% of U.S. homes subscribe to cable or satellite, one of their representatives, argued that in many cable and satellite homes, not all of the televisions are connected to cable and thus actually about 14% of homes use at least some over-the-air broadcasting. Telephone

National Broadband Plan, the FCC seeks to reallocate 120 Mhz of the 294 Mhz currently allocated to television broadcasting to mobile broadband applications.¹⁵

One of the largest challenges in accomplishing spectrum reallocation is to determine how to divert spectrum from current applications and how (or if) to compensate current licensees of that spectrum. Another challenge to clearing television broadcasters from the electromagnetic spectrum is the potential deprivation of television services to the small percentage¹⁶ of U.S. households that rely exclusively on over-the-air broadcasting.

Notwithstanding the substantial challenges involved in any plan to reallocate the spectrum to allow it to be used for higher value applications, such reallocation is widely expected to provide economic and social benefits to society as a whole. However, in order to effect this reallocation, the FCC must determine an appropriate mechanism for doing so. The FCC must consider the rights of the current spectrum holders, television viewers, and U.S. taxpayers as well as political considerations and implications for longer term government policy. Given the scarcity of spectrum and the ease of verifying who is using it, many policy makers have argued that, generally speaking, spectrum licenses should be awarded with full explicit property rights to incentivize their most valuable possible use.^{17, 18} However, FCC licenses do not grant property interests, and the government likely has the right to simply allow the licenses to

Interview with John K. Hane, Counsel, Pillsbury, Winthrop, Shaw & Pittman (June 21, 2010).

15. *Spectrum*, *supra* note 7.

16. Approximately 11 million of the 114 million U.S. homes. See Dennis Haarsager, *Over-the-air TV Households: the Real Number from TVB*, TECH. 360 (June 14, 2010), <http://technology360.typepad.com/technology360/2011/06/over-the-air-tv-householdsthe-real-numbers-from-tvb-pubmedia.html>.

17. Thomas W. Merrill engages in an expanded discussion of the conditions that often lead to the creation of property rights for regulated items. See Thomas W. Merrill, *Explaining Market Mechanisms*, 2000 ILL. L. REV. 275, 280 (2000).

18. The idea that private property-based market allocation of spectrum would yield the most efficient allocation for society have been most notably advocated by Ronald Coase in his seminal article. See Ronald Coase, *The Federal Communications Commission*, 2 J.L. & ECON. 1 (1959) [hereinafter Coase]. This idea is not fully accepted and has been rebutted by others. See, e.g., David Moss & Michael Finn, *Radio Regulation Revisited: Coase, the FCC, and the Public Interest*, 389 J. POL'Y HIST. 15 (2003). The latter paper argues that auctions do not capture the value of "public interests" such as the value of society having universal communication access or the value of improvements to democracy that occur as a result of greater communication, but only captures value that results from profit-making uses.

expire and then re-auction the spectrum for their higher value use in mobile broadband applications.¹⁹

Despite the lack of a legal requirement to compensate the television broadcasters, the government is heavily motivated to do so. This is due to a combination of political pressure from the broadcasters, the government's desire to encourage FCC license holders to invest in offering advanced new services on their spectrum, and the desire to maximize revenue at spectrum auctions. If the government were to set a precedent of not compensating the television broadcasters for their reasonable expectations of continuous renewal, this would likely cause uncertainty about the rights associated with FCC spectrum licenses. Future bidders for FCC spectrum licenses would likely bid less for licenses and be more reluctant to invest aggressively in new services based on those licenses. On the other hand, any compensation for broadcasters potentially increases the costs for the U.S. government dramatically. As a result, there is considerable tension over how (or even if) broadcasters should be compensated for their loss of spectrum rights when the spectrum is cleared for mobile broadband use. Ultimately, the government has strong political and strategic incentives to develop an equitable solution with the broadcasters in any spectrum reallocation process as opposed to scoring a clear "win" over them. Accordingly, the government will likely seek to propose a mutually acceptable solution to clear the broadcasters off the spectrum.

This article analyzes the nature of interests television broadcasters hold in their FCC spectrum licenses, and analyzes options for spectrum reallocation that minimize the potential inequities facing television broadcasters, viewers and U.S. taxpayers. The article will also evaluate existing proposals from economic, public policy, and practical perspectives. Finally, it will propose an alternate framework based on traditional property law principles that considers the challenges and costs to the government of reclaiming the spectrum. The proposed solution would fairly compensate the broadcasters and affected viewers, and would enable the government to realize substantial revenue from re-auctioning the spectrum for mobile broadband use.

19. J. Armand Musey, *Broadcasting Licenses: Ownership Rights and the Spectrum Rationalization Challenge*, COLUM. SCI. & TECH. L. REV., Vol. 13 (forthcoming 2012), available at <http://ssrn.com/abstract=1952138> [Hereinafter *Ownership Rights*].

III. Nature of the Broadcast Spectrum Reallocation Challenge

The challenges in spectrum reallocation can largely be divided into three categories. The first challenge relates to protecting the viewing public from the possibility of significantly reduced television viewing options. The second challenge is a question of how (or if) to minimize harm to broadcasters by their spectrum loss. The third challenge is to protect the interests of the U.S. taxpayers in realizing the economic value of additional broadband spectrum. These interests are somewhat intertwined. It is instructive to examine each component of these interests individually.

A. Broadcasters' Spectrum Serves a Fraction of Their Viewers

A broadcasting license comprises two primary rights. The first is the right to broadcast television over a specified frequency, and the second is the right to require cable and satellite systems in the local area to rebroadcast their programming on their systems. Although somewhat counterintuitive, most of the television broadcasters' value lies not in over-the-air broadcasting, but rather from retransmission via satellite and cable. Over-the-air broadcasting accounts, on average, for less than 10% of television viewers²⁰ and has been slowly declining for several years. Federal law requires cable companies to retransmit local broadcasters' programming in their broadcast areas via the so-called "must-carry" rules.²¹ Similarly, the Satellite Home Viewer's Act ("SHVA") requires satellite television companies to retransmit all local broadcasts in the markets where they retransmit any of them.²² Thus, a reallocation process that would preserve must-carry rights (on both satellite and cable) could allow most of the broadcasters whose spectrum is reclaimed to remain in business and serve their communities.

1. Congressional Involvement is Necessary for Equitable Solution

One complication of preserving must-carry rules for broadcasters who return their licenses is that Congress would have to both modify the current must-carry regime that is codified in the 1992 Cable Act,²³

20. See *Spectrum*, *supra* note 7, at n.87 (referencing a Neilson's estimate of 9.7% for the percentage of Americans who view over-the-air programming exclusively).

21. See 47 C.F.R. § 76.56 (2011) and 47 C.F.R. § 64 (2011) for "must carry" rules.

22. For a summary of the Satellite Home Viewers' Act, see FED. COMM'NS COMM'N, *The FCC's Satellite Home Viewer Improvement Act Page*, <http://transition.fcc.gov/mb/shva/> (last visited Oct. 30, 2011).

23. Cable Television Consumer Protection and Competition Act of 1992, Pub. L. 102-385; 106 Stat. 1460 (1992) (codified in scattered sections of 47 U.S.C.).

and authorize a mechanism for the FCC to pay the broadcasters to return their spectrum. This might be challenging, as members of Congress may not be eager to enter into the process of reclaiming television broadcasting licenses. Many politicians strive to remain in good standing with their local broadcasters who have significant flexibility in granting them airtime under the guise of “news” without violating equal coverage rules.²⁴ However, Congress may have little choice but to get involved if the FCC is not able reach an agreement with the broadcasters as consumer demand for additional mobile broadband spectrum is strong,²⁵ experts are warning that delays in allocating it would hurt the economy,^{26, 27} and the U.S. Treasury is undoubtedly eager for the additional revenue that auctioning the spectrum for mobile broadband would raise.²⁸ Absent congressional legislation, the FCC’s only viable option to reallocate the spectrum would be to use a “zoning approach” (described in Section IV. A. *infra*) to either upgrade the broadcasters to authorize mobile broadband use on their spectrum or to attempt to rezone it so that their rights expire at the end of their licenses. The former would be an enormous give away of government assets, while the latter would impede other government objectives necessitating an equitable solution with the broadcasters.

B. First Amendment Issues May Prevent Continued Must-Carry Regulation

Must-carry rules have allowed broadcasters to remain relevant and profitable despite the dramatic decline in over-the-air television viewership. There is a question as to whether those rules can be separated from the broadcasting licenses themselves and still withstand a First Amendment challenge. Specifically, the courts may not accept a government strategy of lowering its costs of compensating the broadcasters by preserving must-carry rights for broadcasters whose spectrum it reclaims. If the courts do not allow this strategy, the cost of reacquiring broadcasters’ licenses may

24. *Election Coverage and Equal Time*, RADIO TELEVISION DIGITAL NEWS ASS’N, http://www.rtnda.org/pages/media_items/election-coverage-and-equal-time1600.php (last visited Oct. 30, 2011).

25. Stacy Higginbotham, *Spectrum Shortage will Strike in 2013*, GIAOM (Feb. 17, 2010), <http://gigaom.com/2010/02/17/analyst-spectrum-shortage-will-strike-in-2013/>.

26. *Spectrum Crisis*, *supra* note 3.

27. *Hazlett*, *supra* note 6.

28. Estimates of how much such an auction would raise vary significantly, usually between \$20 billion and \$60 billion. See Section V.B. *infra* for a further discussion of this topic.

increase significantly and/or the viewing options for more viewers may decline.

I. Turner I and II Support Must-Carry on Limited Grounds

The Supreme Court's 1994 decision in *Turner Broadcasting Systems v. FCC*,²⁹ held that must-carry rules did not violate the First Amendment because they were based not on the broadcasters' content, but rather on their use of over-the-air broadcasting technology. The Court noted:

It is true that must-carry provisions distinguish between speakers in the television market. But they do so based only upon the manner in which speakers transmit their messages to viewers, and not upon the messages they carry . . . so long as they are not subtle means of exercising a content preference, speaker distinctions of this nature are not presumed invalid under the First Amendment.³⁰

In essence, *Turner I* prioritized speech that is transmitted through broadcast television over speech transmitted through other means. It is not clear the broadcasters would enjoy this privileged position if they no longer broadcast.

In a later must-carry case involving the same parties, *Turner II*,³¹ the Court again upheld a must-carry regulation because it "further[ed] an important government interest; and . . . did not burden substantially more speech than necessary to further those interests."³² The government interest in question was to "guarantee the survival of a medium that has become a vital part of the Nation's communication system, and to ensure that every individual with a television set can obtain free television programming."³³ The Court therefore concluded that the must-carry provisions are consistent with the First Amendment.³⁴ The *Turner II* decision confirmed that "must-carry" provisions are allowable because they further an important governmental interest so long as they do not burden substantially

29. *Turner Broad. Sys. v. FCC (Turner I)*, 512 U.S. 622 (1994).

30. *Turner I*, 512 U.S. at 645–46.

31. *Turner Broad. Sys. v. FCC (Turner II)*, 520 U.S. 180 (1997). This case was also a 5–4 decision (Breyer, J., Kennedy, J., Rehnquist, J., Souter, J., and Stevens, J. joined the opinion of the Court. Ginsburg, J., O'Connor, J., Scalia, J., and Thomas, J. dissented).

32. *Turner II*, 520 U.S. at 189.

33. *Turner I*, 512 U.S. at 647.

34. *Turner II*, 520 U.S. at 189.

more speech than is necessary to further that interest.³⁵ To meet this standard, the broadcasters who surrendered their licenses would have to show their continued existence is an important governmental interest even after they ceased broadcasting.

2. *Breyer's Turner II Concurring Opinion May Support Continued Must-Carry for Former Broadcasters*

In *Turner II*, Justice Breyer's concurring opinion emphasized the public interest in must-carry regulation. Justice Breyer's concurrence was built, in part, on the Court's earlier decision in *Red Lion Broad. v. FCC*, 395 U.S. 367 (1969).³⁶ In *Red Lion*, the Court upheld an FCC determination that it could require a broadcaster to provide air time for a person to respond to a personal attack made on the broadcaster's news program. The Court held that broadcasters merely had First Amendment "interests"³⁷ and "[i]t is the rights of the viewers and listeners, not the right of the broadcasters, which is paramount."³⁸ The Court also noted that "[t]here is nothing in the First Amendment which prevents the Government from requiring a licensee to share his frequency with others and to conduct himself as a proxy or fiduciary with obligations to present those views and voices."³⁹ As a consequence, the Court ruled that the FCC could regulate the broadcasters' news coverage to ensure balanced programming on scarce licensed spectrum. Just as the Court in *Red Lion* found that regulation was justified to ensure the public interest in balanced news coverage, Justice Breyer's *Turner II* concurrence explained his belief that the must-carry statute's main purpose was "to assure the over-the-air public 'access to a multiplicity of information sources.'"⁴⁰

Continuation of must-carry requirements after the broadcasters no longer broadcast over-the-air would be fully compatible with *Turner I* and *Turner II* so long as Congress finds another equally valid non-content based distinction to separate the broadcasters from others. One such option would be the creation of "broadcasting licenses" given to former broadcasters if they meet designated content-neutral requirement(s). However, there is a risk the Court

35. *Id.*

36. *Red Lion Broad. v. FCC*, 395 U.S. 367 (1969).

37. *Id.* at 386.

38. *Id.* at 390.

39. *Id.* at 389.

40. *Turner II*, 520 U.S. at 226 (Breyer, J., concurring) (quoting *Turner I*, 512 U.S. at 663).

could find that such licenses are not valid because they privilege the now former broadcasters' content because of who they are (former broadcasters) as opposed to "the manner in which the speakers transmit their messages to viewers."⁴¹

Even without a non-content based distinction, however, must-carry regulation for former broadcasters may still be compatible with the *Turner I* and *Turner II* decisions if future courts adopt Justice Breyer's view that such regulation is justified because it furthers the public interest in receiving information from multiple sources. A court adopting this perspective would likely uphold continued must-carry rules for former broadcasters so long as they do not burden speech more than necessary to achieve an important government objective. The important government interest would be the promotion of widespread access to local television content for cable and satellite subscribers as well as over-the-air viewers.⁴² Local television broadcasters are a primary source of local news content for many people, regardless of how they receive their television signals. The benefits of diversity of content, particularly local content, could not be fully maintained without keeping the current broadcasters in business via transmission on cable and satellite systems. Accordingly, must-carry requirements for former broadcasters could likely meet the more stringent "intermediate scrutiny" standard of review whereby the reviewing court must consider whether the statute involves important governmental interests and whether the law is substantially related to the achievement of important governmental objectives.⁴³

3. *But Would Courts Uphold Must-Carry Today Under Any Circumstance?*

The bigger question for the broadcasters is whether must-carry regulation would be upheld today under any circumstance.⁴⁴ *Turner I* suggests must-carry regulation was designed specifically to protect

41. *Turner I*, 520 U.S. at 645.

42. In enacting spectrum reallocation legislation that includes must-carry rules for non-broadcasting broadcasters, Congress could make a specific finding about the importance of the government objective of promoting access to local broadcasting content.

43. *Intermediate Scrutiny*, CORNELL UNIV. LAW SCH. LEGAL INFO. INST., http://topics.law.cornell.edu/wex/intermediate_scrutiny (last visited Sept. 4, 2010) (defining intermediate scrutiny).

44. See Petition for Writ of Certiorari, *Cablevision Sys. Corp. v. FCC*, 2010 WL 326554 (No. 09-901), *cert. denied*. Cablevision petitioned for writ of certiorari in this case seeking to overturn must-carry regulation. Cablevision's argument is largely that, based on changes in the media industry, the original rationale for must-carry no longer applies.

only those people who do not subscribe to cable television by ensuring they had content:

Appellants contend, in this regard [that even non-content-based must-carry rules have content implications], that the must-carry regulations are content-based because Congress' purpose in enacting them was to promote speech of a favored content. We do not agree. Our review of the [Cable Television Consumer Protection and Competition] Act and its various findings persuades us that Congress' overriding objective in enacting must-carry was not to favor programming of a particular subject matter, viewpoint, or format, but rather to preserve access to free television programming for the 40 percent of Americans without cable.⁴⁵

Any benefits of must-carry to cable and satellite subscribers are not mentioned. Moreover, the value of protecting those who rely on over-the-air broadcasting has greatly diminished. When *Turner I* was decided in 1994, approximately 40% of U.S. households did not have cable, and the percentage was not significantly lower in 1997 when *Turner II* was decided.⁴⁶ Today, the situation is quite different insofar as approximately 90% of U.S. households presently subscribe to cable or satellite systems and less than 10% rely exclusively on over-the-air transmission.⁴⁷ As a result, one of the primary justifications for upholding must-carry regulation has substantially diminished.

Moreover, the opinion of the Court in *Red Lion* and Justice Breyer's concurring opinion in *Turner II* represent the "public trust" model of regulation whereby spectrum is held for the benefit of the public. Krystilyn Corbett⁴⁸ argues that the "public trust" model has waned over time in favor of the "private market" model that gives greater control of spectrum resources to license holders. Additionally, given the diminishing number of over-the-air television viewers and changes in the composition of the Supreme Court,⁴⁹ must-

45. *Turner I*, 512 U.S. at 646.

46. Satellite as a comparable substitute to cable television was a very small part of the broadcasting industry in 1994 as the high powered satellite television providers (the DBS systems—DirectTV and EchoStar) did not begin service until after 1994.

47. Many industry observers suggest that, when piracy is included, approximately 95% of U.S. households have cable or satellite television service.

48. Krystilyn Corbett, *The Rise of Property Rights in the Broadcast Spectrum*, 46 DUKE L.J. 611 (1996) [hereinafter *Corbett*].

49. The *Turner I* case was decided in a 5–4 decision and the majority included Justices Blackmun, Kennedy, Rehnquist, Stevens, and Souter. Only Justice Kennedy

carry regulation would probably not be upheld today unless the Court were to find that its benefits extend to cable and satellite viewers by providing them access to local content they would not otherwise have. However, the Court may well reject this argument as part of a move to a private market approach to spectrum regulation that would give higher priority to the First Amendment rights of broadcasters than previous Courts have done.⁵⁰ Given the possible shift away from the public trust model of spectrum regulation and the diminishing number of over-the-air television viewers, it is not clear that Justice Breyer's concurring view in *Turner II* would be adopted by the Court in a review of must-carry rules today.

If spectrum reallocation legislation resulted in must-carry rules that include broadcasters who no longer broadcast over-the-air, the satellite and cable companies would have an opportunity to re-litigate the must-carry rules. Such litigation might allow the Court to reconsider its decision without explicitly having to overturn *Turner I* or *Turner II*. Finally, as explained below, the must-carry rules are becoming less relevant as fewer broadcasters avail themselves of this option. Because of the decreasing relevance of the must-carry rules, a successful court challenge to these rights may not be a fatal blow for the broadcasting industry. Rather, the industry may just have to shrink somewhat, letting the majority who can survive without must-carry do so. In the worst case, the cost of compensating the broadcasters could rise to \$15.2 billion.⁵¹ If the must-carry rules can be preserved for broadcasters whose spectrum is reclaimed and can

remains on the Court today. The dissent included Justices Ginsburg, O'Connor, Scalia and Thomas, all of whom except Justice O'Connor remain on the Court today. *Turner II* was also a 5-4 decision with Justices Breyer, Kennedy, Souter, and Stevens affirming and Justices Ginsberg, O'Connor, Scalia, and Thomas dissenting. As a whole, the justices of today's Court have a stronger private market perspective than those of the *Turner* era. Court observers widely view today's Court as less likely to uphold market regulation that impinges on Constitutional rights (including First Amendment rights) of FCC licensees than earlier Courts. Changes in the media marketplace could give the Court an opportunity to revisit *Turner I* and *Turner II* and effectively nullify the decision without explicitly overturning it.

50. The dissent in *Turner II* made it clear it viewed prioritization of certain types of programming, such as local programming, as not being content neutral. *Turner II*, 520 U.S. at 235.

51. Economist Coleman Bazelon et al.'s detailed economic analysis conservatively suggests the cost to buyout the affected broadcaster's spectrum in a reverse auction process would be approximately \$14.4 billion plus \$0.78 billion to repack the spectrum for a total of \$15.4 billion. Coleman Bazelon, Charles L. Jackson & Giulia McHenry, *An Engineering and Economic Analysis of the Prospects of Reallocating Radio Spectrum from the Broadcast Band through the Use of Voluntary Incentive Auctions*, TELECOMM. POLICY RESEARCH CTR., 2, (Sept. 19, 2011) <http://www.tprcweb.com/jdownloads/2011/Spectrum%20Markets/tprc-2011-sm-3.pdf> [hereinafter Bazelon II].

also satisfy First Amendment concerns, they have the potential to dramatically reduce the impact of broadcasters' losing their spectrum on both the broadcasters and their viewers.

One complication to a strategy of maintaining must carry rules for television broadcasters who surrender their spectrum licenses is that absent spectrum licenses, the broadcasters using cable and satellite for distribution would naturally feel less secure about their businesses. This is because future amendments in the law could deny them retransmission rights on cable and satellite systems. These concerns could be alleviated by a clear contract providing for liquidated damages if the broadcasters' retransmission rights on cable and satellite were ever disrupted due to future changes in the law or adverse court decisions.

C. Television Service Gaps Will Arise

If television broadcasters are cleared from the electromagnetic spectrum, a small percentage of households which rely exclusively on over-the-air broadcasting may never pay to subscribe to cable or satellite television services. Accordingly, the question arises as to whether spectrum reallocation will deprive these individuals of access to television.

1. *Subsidized Cable or Satellite May Bridge the Access Gap*

If Congress wanted to preserve off-the-air television viewers' access to television as well as the television broadcasters' over-the-air audience, it could require purchasers of mobile broadband spectrum to allow free access to a server containing on-demand content from each of the broadcasters. This solution, however, is not likely to work, as it would require too much bandwidth to individually stream local broadcasts wirelessly. Of course, as wireless broadband compression technology improves, this may someday become possible, particularly in rural areas where more bandwidth is available.

A more plausible solution, however, would be for the government to subsidize a basic "local stations only" package for those viewers. Almost every U.S. home has access to either cable or satellite service. EchoStar and DirecTV offer local subscription packages for only \$5.99 a month.⁵² The cable systems have similar content costs as the

52. Based on the author's personal knowledge, these are highly profitable services for EchoStar and DirecTV at \$5.99 per month with content costs averaging less than 25% of revenue, but they are always sold in conjunction with a larger package. A "local channels only" service is likely to be challenging from a billing and administrative perspective, but

satellite providers. Based on a cost of \$6.00 per month, and allowing for the installation cost assumptions of \$87.50 to reflect a 75/25 percent mix of cable and satellite (with higher installation costs for satellite), a discount rate of 8 percent and 5% annual subscriber churn would produce an estimate of approximately \$9.7 billion to move all over-the-air viewers to basic cable or satellite systems. However, as described in Section V.A. below, only broadcasters in approximately 20% of the markets will be impacted. While those markets are more densely populated, they are likely to have a lower percentage of over-the-air viewership.⁵³ Assuming, on balance, these markets also have 12% of the over-the-air viewers, the cost of moving them to cable or satellite is reduced to \$2.3 billion. (See Exhibit 1 below for sensitivity analysis of the cost of subsidizing cable/satellite service for subscribers currently receiving exclusively over-the-air reception.) Under any realistic assumptions, the revenue potential from the spectrum auction⁵⁴ and the social benefits of increased broadband spectrum dwarfs this cost. Moreover, since less than 100% of the affected viewers are likely to sign up for the subsidized cable or satellite subscription, the cost is likely to be somewhat lower.

Exhibit 1.						
Cost (\$B) of Subsidizing Cable/Satellite for Current OTA Only Viewers*						
		Percent of Over-the-Air Viewers				
		8.0%	10.0%	12.0%	14.0%	16.0%
Broadcast Markets Covered	30.00%	\$2.3	\$2.9	\$3.5	\$4.1	\$4.7
	28.00%	\$2.2	\$2.7	\$3.3	\$3.8	\$4.3
	26.00%	\$2.0	\$2.5	\$3.0	\$3.5	\$4.0
	24.00%	\$1.9	\$2.3	\$2.8	\$3.3	\$3.7
	22.00%	\$1.7	\$2.1	\$2.6	\$3.0	\$3.4
	20.00%	\$1.6	\$1.9	\$2.3	\$2.7	\$3.1
	18.00%	\$1.4	\$1.7	\$2.1	\$2.4	\$2.8
	16.00%	\$1.2	\$1.6	\$1.9	\$2.2	\$2.5
	14.00%	\$1.1	\$1.4	\$1.6	\$1.9	\$2.2
	12.00%	\$0.9	\$1.2	\$1.4	\$1.6	\$1.9
	10.00%	\$0.8	\$1.0	\$1.2	\$1.4	\$1.6
	8.00%	\$0.6	\$0.8	\$0.9	\$1.1	\$1.2
	6.00%	\$0.5	\$0.6	\$0.7	\$0.8	\$0.9

*Assumes 114M US households, 10% are over-the-air viewers, \$87.50 avg installation cost, \$6.00 monthly service price, 8% discount rate and 5% annual churn.

the government could probably simply send the check to the cable company in bulk each month to reduce costs and still keep the service viable at these prices.

53. Dianne E. Watson, Keynote Address to Minority Media and Telecommunications Council Regulatory Breakfast on Minority Media Ownership and Telecommunications Legislation (July 2005), available at http://www.womenspeecharchive.org/files/c_1164814080880.pdf [hereinafter Watson].

54. See *supra*, note 28, and *infra* Section V.B. for a discussion of revenue potential from auctioning television broadcasting spectrum for mobile broadband use.

2. *Channel Sharing May Alleviate Reduction in Broadcasting Options*

Even if approximately 40% of the broadcast spectrum in those markets is redeployed, residents will still have over-the-air broadcasting from the remaining 60% of the broadcasters without changes. They will hardly be deprived of choice relative to most of the rest of the country, particularly if they are offered a subsidized cable subscription plan. However, another option to preserve broadcasters' businesses would be to utilize the industry's remaining spectrum differently and potentially more efficiently. With the digital conversion, television broadcasters no longer require the full 6 Mhz of spectrum they currently receive with their licenses to broadcast a standard television show. Standard definition channels now only require approximately 1 Mhz and even high definition channels can be broadcast with approximately 3 Mhz of spectrum. This opens the possibility of channel "sharing" whereby two stations, or more, could "share" one 6 Mhz channel or repacking each channel to only 3–4 Mhz so as to accommodate more of existing broadcasters on less spectrum. Such spectrum realignments, while within the FCC's current authorization, often require a painful regulatory process the FCC may not be willing to endure.⁵⁵

Regardless of whether the government chooses continued must-carry with subsidized cable and satellite, channel sharing or smaller television broadcast spectrum allocations to accommodate more broadcasters, it has several options to ensure that residents in regions served by broadcasters who lose spectrum have access to free local broadcast content. These options would leave considerable savings after the receipt of \$34.9 billion to \$41.7 billion of auction proceeds, minus the compensation, if any, to broadcasters and/or subsidization of basic cable and satellite.⁵⁶

55. The FCC recommends that Congress expand its powers to offer various incentive auctions to incumbent licensees largely because "[c]ontentious spectrum proceedings can be time-consuming, sometimes taking many years to resolve, and incurring significant opportunity costs. One way to address this challenge is by motivating existing licensees to voluntarily clear spectrum through incentive auctions." *Spectrum*, *supra* note 7, at Recommendation 5.4.

56. See *supra* note 28, and Exhibits 5 and 6 in Section V.B. *infra* for an analysis of potential auction proceeds.

D. Government Promises to Respect Broadcasters' Property Interests in Their FCC Licenses

On multiple occasions in 2010 and 2011,^{57, 58} the government announced it would transition the television broadcast spectrum on a voluntary basis. That is, the government would negotiate the terms of the buyout with the broadcasters, who could opt out of the settlement. Because the process is “voluntary,” the broadcasters could theoretically refuse to participate and instead retain control of their licenses, thus thwarting the government’s desire to reacquire the spectrum. Moreover, by proposing such negotiations, the government is essentially offering to implicitly recognize that the broadcasters possess property rights in their licenses (or at least that the government will behave in a manner that mimics such recognition). This is because the ability to control an asset is a critical element of property rights. As a result of the government’s de facto recognition that broadcasters possess property rights in their licenses, the broadcasters would be entitled to compensation for any deprivation of those interests. Industry observers have speculated as to the pricing and terms of the television broadcasters’ buyout. Few doubt the broadcasters will end up with a package that does less than make them whole.

IV. Existing Proposals for Removing Television Broadcasters From the Electromagnetic Spectrum

With the question of recognizing property rights effectively resolved for purposes of efficiently moving the broadcasters off the spectrum, the debate shifts to how to determine appropriate compensation to the broadcasters for voluntarily relinquishing their spectrum rights. Given the estimated enterprise value⁵⁹ of the

57. Lawrence Summers, director of the National Economic Council, is quoted as saying “Our plan [to free-up spectrum for mobile broadband] will allow all stations that currently broadcast the right to continue to broadcast,” in a speech at the New America Foundation on June 29, 2010. “It is based on the principle of voluntarism.” *Summers Emphasizes Voluntary Return of Broadcast Spectrum*, TELEVISION BROADCAST .COM, (June 28, 2010, 1:00 PM), <http://www.televisionbroadcast.com/article/102670>.

58. Julius Genachowski, chairman of the FCC, is quoted as saying, “but the single biggest step [to free-up spectrum for mobile broadband] is voluntary incentive auctions.” Julius Genachowski, Chairman, FCC, *Jobs and the Broadband Economy*, Address at LivingSocial Event (Sept. 27, 2011), available at <http://www.fcc.gov/document/genachowskis-speech-jobs-and-broadband-economy>.

59. “Enterprise Value” is a financial term used to denote the full value of a business. It is calculated as equity value + debt – cash + other adjustments.

broadcasting industry is approximately \$60 billion to \$65 billion,⁶⁰ and the implications any precedent may have on other FCC licensees, the issue of spectrum reallocation has received considerable attention from the broadcasting industry, consumer groups and from those concerned about maximizing the benefits to the U.S. Treasury from a future re-auction of the spectrum. Unsurprisingly, many proposed solutions have been advanced—each with their own strengths and weaknesses.

A. Not Renewing Licenses is an Option

One possible solution for reallocating the television broadcast spectrum is for the FCC to simply not renew the licenses of the television broadcasters at the end of their license periods. While this would be consistent with the letter of the law and the legislative history, it might be an uphill battle from a historical interpretation perspective. It would essentially deny the broadcasters any property rights based on either licenses or easement or adverse possession. However, based on the government's experience with cattle grazing permits, this option may be feasible for the government. Specifically, holders of grazing permits had considerably greater historical precedent and some arguably favorable legislative history supporting their arguments for renewal rights than do broadcasters.⁶¹ Nevertheless, courts have consistently allowed the government to deny renewal of the permits based on a textual analysis of the applicable statutes.⁶² Similarly, courts would likely permit government nonrenewal of broadcasters' licenses based on the same textual analysis of the communications statutes.⁶³

Perhaps the strongest argument for this approach is that it would help to prevent setting a precedent that holders of government licenses, in any area, from mining, to oil drilling to cattle grazing, possess property rights associated with those licenses. The U.S.

60. One report estimates the enterprise value of the broadcasting industry to be \$63.2 billion. See Coleman Bazelon, *The Need for Additional Spectrum for Wireless Broadband: The Economic Benefit and Costs of Reallocations*, WHITE PAPER, at 13 (Oct. 23, 2009) [hereinafter Bazelon I]. An FCC report estimates it to be \$63.7 billion. *Spectrum*, supra note 7 at n.87. [collectively, hereinafter *Broadcast Industry Valuation*].

61. *Ownership Rights*, supra note 19, at 27.

62. See, e.g., *Pub. Lands Council v. Babbitt*, 529 U.S. 728 (2000); *Fed. Lands Legal Consortium v. United States*, 195 F.3d 1190 (10th Cir. 1999).

63. The FCC has stated it has this right. The FCC also claims it has the right to modify licenses in the middle of license periods. FCC Report 10-201, at 76, FCC (Dec. 23, 2010), http://transition.fcc.gov/Daily_Releases/Daily_Business/2010/db1223/FCC-10-201A1.pdf, [hereinafter *FCC Report 10-201*].

government cannot function efficiently if it faces the risk of unwillingly granting property rights anytime it grants a license to access government resources. From a political perspective, however, non-renewal of licenses would be considered “unfair” and give the broadcasters significant ability to mobilize their already powerful political support. Even if successful, this approach would likely also take considerable time due to the numerous legal challenges and appeals from the broadcasters.⁶⁴ Moreover, it may well put many broadcasters out of business, depriving their viewers of the benefits of their television content. Another problem with the nonrenewal approach is that it would likely cause current and potential FCC spectrum license holders to question the certainty of their license rights. This would disincentivize them to bid the highest rates at FCC auctions and invest in the aggressive build out of the very advanced broadband services the FCC seeks to encourage.

B. Upgrade the Television Broadcasting Licenses Free of Cost

The opposite extreme to not renewing broadcasting licenses is to “upgrade” the broadcasters’ rights. Currently, the broadcasters’ licenses only allow them to use their spectrum for television broadcasting and some limited ancillary uses. An upgrade would allow the broadcasters to migrate their use of frequency from television broadcasting to mobile data. This is somewhat similar to Evan Kwerel and John Williams’ proposal,⁶⁵ which advocates having the broadcasters auction their spectrum to parties, including themselves, who would use it for the highest value alongside a government auction for unassigned broadcasting spectrum. This approach would be the most politically expedient solution with respect to the broadcasting community and the FCC could effect it without the need for congressional action. This proposal would likely eliminate any resistance from the broadcasters because they would receive a free option to use their licenses for more lucrative mobile broadband. The government could potentially implement the free “upgrade” approach quickly and unleash the significant societal benefits from the increased broadband access. This approach would

64. *Ownership Rights*, *supra* note 19, at 45.

65. Evan Kwerel & John Williams, *A Proposal for a Rapid Transition to Market Allocation of Spectrum*, in 38 OPP WORKING PAPER SERIES (November 2002) [hereinafter Kwerel & Williams].

also place spectrum in private hands, an approach many economists favor.⁶⁶

However, giving the mobile broadband usage rights to the broadcasters would also likely generate massive resistance from other holders of mobile broadband spectrum, notably the wireless carriers who, since the 1990s,⁶⁷ have paid enormous amounts for their spectrum. These carriers would object that the dramatic increase in supply of spectrum would decrease the value of their spectrum. In addition, those who paid handsomely for their spectrum rights for mobile broadband use would legitimately complain that the free grant of mobile broadband rights to broadcasters would give the broadcasters an unfair competitive advantage. Unlike the incumbent mobile broadband providers, the broadcasters would have no debt service or return-on-investment hurdles related to acquiring the spectrum.⁶⁸

These concerns could be alleviated, however, through an auction process whereby broadband rights would be auctioned and the existing holders, the broadcasters in this case, would keep the proceeds. Existing mobile broadband providers, for whom the value of spectrum is highest, would likely purchase the majority of the spectrum.⁶⁹ Furthermore, because all acquirers in an auction would have to pay for their spectrum, there would be little change in competitive position with respect to debt levels, return on investment hurdles or other financial/strategic issues.

The most problematic aspect of Kwerel and Williams' "give-away" approach is that it would deprive the federal government of any revenue from the new use of the broadcasters' spectrum. The value would go to the broadcasters who did not even pay the government for the rights to use the spectrum for television

66. This line of economic thinking started most prominently with Ronald Coase's seminal article. *See* Coase, *supra* note 18.

67. In the 1980s, the early stages of the wireless industry, wireless operators received FCC spectrum licenses without payment based on a comparative hearing process.

68. When the FCC authorized the Alternative Terrestrial Component ("ATC") which enabled the satellite telephone carriers to use their spectrum terrestrial, there was enormous negative feedback from the wireless carriers. Lynetta Luna, *Satellites and Spectrum*, URGENT COMM'NS (March 1, 2003), http://urgentcomm.com/mag/radio_satellites_spectrum. Allowing television broadcasters free "upgrade" of their spectrum to use it for mobile broadband would be exponentially larger, and presumably cause an even greater outcry.

69. Given the enormous start-up costs and economies of scale for a mobile communications service, it would be unlikely for a new service to emerge if it has to pay market price for all of its assets. Therefore, the successful bidders for spectrum are likely to be existing telecom service providers.

broadcasting, much less for the more economically valuable use of mobile broadband services. To simply give this excess value to the broadcasting industry would be an enormous act of government waste and deprive U.S. taxpayers of a significant source of revenue. However, if the FCC is not able to strike a deal with the broadcasters, they may be forced into this solution. After a certain amount of delay, the large economic benefits to society of broadband deployment could outweigh the waste involved in giving away large amounts of spectrum value. As mentioned previously, if Congress does not act, the FCC may have little choice.

C. “Incentive Auctions” and Other Upside Sharing Between Broadcasters and the Government

Several legislative proposals suggest the government should “share” the upside of the higher value use of the spectrum with the broadcasters via “incentive auctions”⁷⁰ or other suggest methods such as “overlay rights.”⁷¹ The primary problem with these “sharing” solutions is that they are not based on clear, defensible legal principles. Almost any level of sharing of the “upside” for the move from television broadcasting to mobile broadband is destined to seem arbitrary and turn into an entirely political negotiation. This could also set a problematic precedent, as it might suggest to licensees of other spectrum the FCC might want to repurpose that the FCC is required to share the increased value from that repurposing with them as well. Additionally, the introduction of a new paradigm for spectrum allocation is likely to take a long time to clear political hurdles and be accepted by the many constituencies involved. As previously noted, time is critical in moving television broadcast spectrum to make additional room for mobile broadband use. Finally, voluntary sharing models will not ensure the availability of uniform amount of spectrum nationwide needed for efficient mobile broadband deployment. Some involuntary methods will likely still be needed to clear holdout broadcasters in certain markets.

70. These include provisions in House Resolution 2482 and expected provisions in the recommendation of the United States Congress Joint Select Committee on Deficit Reduction—also known as the “super committee.” See American Jobs Act of 2011, H.R. 2482, 111th Cong., Doc. No. 112-53 (2011); Sam Churchill, *NTIA “Finds” 1.5 GHz of Federal Spectrum*, DAILYWIRELESS.ORG (Oct. 19, 2011, 12:18 PM), <http://www.dailywireless.org/2011/10/19/ntia-finds-1-5-ghz-of-federal-spectrum/>.

71. Professor Hazlett proposes an auction of rights for mobile broadband rights using the current television broadcast spectrum whereby the auction winner would need to negotiate approval for use with the television broadcaster occupying that spectrum. *Hazlett, supra* note 6, at 9–18.

In a twist on the sharing model, a recent proposal by the broadcasting industry⁷² suggests the government upgrade their spectrum licenses to allow the broadcasters to work with broadband providers to “overlay” their broadband services on traditional television broadcasting, presumably on the portions of their 6 Mhz allocations they are not using. The broadband providers would pay a fee to the television broadcasters. In return, the television broadcasters would share a portion of this fee with the federal government. Conceptually, this concept is even more egregious than the incentive auction proposal from a public policy perspective. With the incentive auction proposal, the broadcasters, who have minimal legal rights to the spectrum are being offered an opportunity to give up their spectrum in return for a share of the upside when it is sold. In the case of the “overlay” proposal, the broadcasters are asking for greater rights to their spectrum with an offer to “share” some of it with the federal government. Presumably, they are advocating retaining control of the spectrum to achieve greater economics than simply sharing in the auction proceeds, thus increasing the level of waste for U.S. taxpayers.

A significant redeeming feature of sharing proposals, however, is that they offer the broadcasters significant upside while avoiding a direct government payout, which would more directly expose the government to charges of waste. Of course, under any sharing plan, the U.S. government would ultimately indirectly pay for the expected cost of any payments to the broadcasters as the revenue from the sale of the broadcasting rights would be less than a direct sale of the spectrum by the expected amount of the cost to “clear” the broadcasters from the spectrum. Accordingly, despite its potential political merits, sharing proposals are neither optimal for the U.S. Treasury nor will they quickly and uniformly clear spectrum for next generation mobile broadband providers.

D. Licensing “White Spaces” Between the Television Broadcasters

Since only about 17% of the broadcast channel allocation is used, another possible way to accommodate mobile broadband applications without disturbing current television broadcasters is for the FCC to license the unused “white space” between the frequencies used by broadcasters. This idea has at least four major problems. The first

72. Rick Smith, *Broadcast Coalition Offers Alternative to FCC Spectrum Auction*, WRALTECHWIRE (Oct. 20, 2011, 5:38 PM), http://wraltechwire.com/business/tech_wire/opinion/blogpost/10281218/.

problem is the white space tends to differ in each television Designated Market Area (“DMA”). As a result, consumer devices would likely need complex technology to detect which frequencies could be used in certain areas without interfering with the television broadcasters. This in turn would drive up the cost and complexity of rolling out incremental mobile broadband services. As a second problem, white space tends to be most abundant in rural areas where demand for incremental spectrum is lowest, while white space is less available in metropolitan areas where demand is the highest. For example, in the Los Angeles/San Diego area, there is, even with no adjacent channel protection, only 60 MHz of white space, whereas in Wichita there is 216 Mhz.⁷³ While 60 MHz is a significant amount of spectrum, it is one fifth of the 300 Mhz the FCC is seeking in the first stage of the National Broadband Plan. Moreover, when FCC Radius channel protection is added, there is only 6 Mhz of white space in the Los Angeles/San Diego area and none in New York, but 102 Mhz in Wichita.⁷⁴ The third problem is that licensing white space would lock new users into fragmented spaces of spectrum that are frequently not individually large enough to be optimal for mobile broadband. Moreover, the broadcasters’ business model has been under pressure⁷⁵ and many will likely go out of business over the next several years.⁷⁶ Therefore, it does not make sense for the FCC to encourage new mobile broadband services to build their business models around suboptimal pieces of spectrum that will be eventually clearing, albeit slowly, on their own. It makes more sense for the government to have an organized national spectrum clearing process.⁷⁷ Finally, the fragmented nature of the spectrum and its

73. COLEMAN BAZELON, CHARLES L. JACKSON & DOROTHY ROBYN, COMMENTS OF CHARLES L. JACKSON, DOROTHY ROBYN AND COLEMAN BAZELON (THE VALUE OF WHITE SPACE) Figure B-2 (2008), available at http://www.brattle.com/_documents/uploadlibrary/upload691.pdf. [Hereinafter *Service Rules*].

74. *Id.* at Figure B-4.

75. See discussion *infra* Part V. A. for a further discussion of television broadcasters’ business model.

76. The television broadcasters will likely experience some increase in advertising revenue over the next year due to increased political advertising in the 2012 election cycle and the emergence of the U.S. economy from recession. However, the long-term industry outlook is negative.

77. Some of the third objection could be solved by “repacking” the remaining broadcaster’s spectrum. Repacking would involve an FCC administrative process whereby remaining broadcasters’ frequency is reorganized into contiguous blocks, potentially allowing for large continuous nationwide blocks for mobile broadband. The transition to digital broadcasting facilitates this process since broadcasters could potentially keep their station number on viewers’ digital receivers even though the broadcast frequency has changed. Broadcasters would, however, need to make changes to

inverse availability in areas relative to where it is needed most would lower its value in any auctions. One study put a maximum value of such an auction at \$24.4 billion, with a projection for half that amount if there is adjacent channel protection to reduce interference between licensees.⁷⁸ This is significantly lower than levels indicated in the analysis in Exhibit 5. While the FCC has decided to allocate some white-space spectrum to unlicensed mobile broadband usage,⁷⁹ this can only be a small part of the solution. Meeting the FCC's goal of reallocating 120 Mhz of spectrum nationwide will require that some broadcasting licenses, particularly in metropolitan areas, be revoked, or not renewed, with or without compensation.

Some telecommunication industry observers have suggested unlicensed applications for white space.⁸⁰ This is preferable to the long-term commitments that would implicitly be made by licensing this spectrum, but it does not give businesses the confidence they would need to invest heavily in development of new mobile broadband services. It also does not solve the interference concerns and would not provide any money to the U.S. Treasury.⁸¹

E. Grandfathering Current Broadcasters to Slowly “Phase-in” Spectrum Changeover

Another option is to “grandfather” existing broadcasters while preventing new entrants in the broadcast spectrum. In many environmental regulatory situations, regulators often “grandfather” existing participants, rather than buying them out. This allows them to continue indefinitely, while not allowing new entrants, in order to change an accepted practice over a period of time. In the broadcasters' situation, this would mean letting existing broadcasters continue, but not issuing new broadcast licenses. This has the obvious advantage of avoiding a costly government buyout as the new regime is implemented and the “grandfathered” participants cease. However, this would be a very slow process as many broadcasters

their transmission equipment. One estimate of this cost is \$0.78 billion. *Bazelon II, supra* note 51, at 22.

78. *Comments of Jackson, et al., supra* note 73, at 7.

79. Second Memorandum Opinion and Order, ET Docket No. 04-186 (Sep. 23, 2010), available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2010/db0923/FCC-10-174A1.pdf (last visited Nov. 8, 2011).

80. Sascha D. Meinrath & Michael Calabrese, *Unlicensed “White Space Device” Operations on the TV Band and the Myth of Harmful Interference*, NEW AMERICA FOUND., (Mar. 2008).

81. Anecdotal information from industry sources indicates the U.S. Treasury is closely watching this process with an eye towards maximizing revenue for the government.

have been in business for decades and are not likely to voluntarily leave the industry soon. “Grandfathering” tends to work better in other contexts, such as pollution, where the plants (or machinery) causing the pollution naturally need to be replaced over time due to wear and tear. Moreover, for broadcasters to find grandfathering palatable, they would want to be able to transfer their grandfathered permits. If this were allowed, any meaningful reduction of television broadcast frequency usage would take decades. Grandfathering is an option that is more appropriate when trying to prevent an unwanted externality, such as pollution, from increasing, as opposed to rapidly decreasing it as is the need with television broadcasting over the electromagnetic spectrum.

V. Traditional Property Rights Principles Provide a Mechanism for Compensating Broadcasters

Given the government’s effective recognition of elements of property rights in broadcasters’ spectrum licenses, the established traditional property principles of zoning and eminent domain—two methods by which government can reclaim its rights to private property—may provide the most simple, the most politically expedient and the most principled framework for guiding a solution to compensate broadcasters. The balance of this paper will explore these two options.

A. Zoning Alone is of Limited Use in Framing a Solution

Zoning concepts may be useful in the context of spectrum reallocation, but are ultimately problematic as a complete solution. Through zoning ordinances, governments frequently alter property rights to achieve a desired social outcome. Zoning ordinances often significantly alter the value of property or even prohibit the owner from engaging in their current business. Currently, the broadcast television spectrum is “zoned” exclusively for that use. As a city planner might rezone a section of town from commercial to residential, the FCC could theoretically “rezone” the spectrum from use for television broadcast use to mobile broadband use. While this “rezoning” would ultimately increase the value of the spectrum to society (by allowing for mobile broadband use), it would likely eliminate the value of the current holders of broadcasting licenses, defeating the government’s desire for an equitable solution. In addition, “rezoning” entails uncertainties that limit its desirability as a solution to the challenge of spectrum reallocation.

I. Uncertainty with Zoning Approach

An attempt by the FCC to rationalize spectrum use by changing the “zoning” of the television broadband spectrum to exclusive mobile broadband use would be risky because the impact on existing broadcasters is uncertain. If commercial land, for example, is rezoned residential, the owner can still build a residential home on the property. In the spectrum context, however, it is not certain whether a rezoning would similarly give the existing television broadcasters the right to use the spectrum for the “rezoned” (and much more valuable) mobile broadband use.

Alternatively, such rezoning may eliminate their rights to the spectrum completely. The first scenario (whereby the broadcasters would automatically have rights to the rezoned spectrum) is unlikely because it requires a determination that broadcasters have complete property rights for all authorized uses of their spectrum, insofar as they could use the spectrum for the new more valuable mobile broadband applications. Such a finding would be against any plain reading of the text of their licenses that limits their use to television broadcasting. The latter scenario (whereby the rezoning would cause the broadcasters to lose all rights) is far more likely because the weight of the evidence, particularly the usage rules surrounding broadcast licenses, suggests that the television broadcasters only have rights for television broadcasting. Thus, if the broadcasters’ spectrum were rezoned for different use, the broadcasters would likely lose all rights to the spectrum. But depending on how the television broadcasters’ rights are viewed, they may be entitled to compensation for their current use. In a traditional property context, this situation is tantamount to a property where one party, a farmer, for example, sells the commercial building rights to a property while keeping the farming rights. In the event the property was rezoned entirely residential, the farmer could lose his or her interest completely as only one element of the property’s use is being affected. If a court took a narrow view of the farmer’s property rights, that all of his farming rights were lost, however, he or she could be due compensation. Although the risk is low, the government may not want to expose itself to the possible risks (however small) of being forced to recognize full property rights to television broadcasters to use their licensed spectrum for mobile broadband. On the other hand, the government would also want to avoid being forced to pay uncertain compensation or risk an inequitable solution for broadcasters.

An intermediate zoning option would be for the FCC to reduce the spectrum allocated to the broadcasters from the current 6 Mhz per channel. This would be somewhat akin to a zoning ordinance that requires property owners to allocate some of their property for public use. While reducing the spectrum allocation of each broadcaster may be part of an overall strategy to free spectrum for mobile broadband applications, it is unlikely to open up a sufficient quantity of spectrum for the government to meet its overall goal of reclaiming 120 Mhz of television broadcast spectrum. To meet its nationwide spectrum goals, the government will likely have to completely eliminate some currently existing broadcast licenses.

2. *Timing Considerations for Zoning Changes*

If the government were to pursue rezoning as a viable option to reallocate the spectrum, it would need to determine the optimal timing of such action. Traditional property law dictates that if a property interest (which presumably includes the broadcasters' expectation of use for the duration of their license periods as well as any other potential property interest in the spectrum) is eliminated in order to confer a benefit to society, the owner is entitled to fair value compensation based on the prior use. In *Pennsylvania Coal*,⁸² the Supreme Court ruled that regulation which effectively eliminated the mining rights to land was a regulatory taking requiring compensation. Thus, a rezoning that annulled the broadcasters' spectrum rights during their license terms would also be considered a regulatory taking and would likely require market compensation based on the takings clause of the Fifth Amendment, despite the lack of clear property rights in the spectrum license. The broadcasters' licenses provide them with a clear expectation of use of the spectrum for the duration of the license period. A zoning change during the license period by the party who granted the license would clearly frustrate those expectations. However, the broadcasters would not be entitled to any compensation if the FCC could successfully demonstrate that the rezoning was being done to prevent harm to society or eliminate a public nuisance.⁸³ Specifically, the FCC would have to demonstrate that the current usage of the spectrum harms society as it limits the availability of more valuable mobile data applications. However, this argument would likely fail because zoning to prevent harm is typically used for health and safety issues. Limited access to mobile

82. Pa. Coal Co. v. Mahon, 260 U.S. 393 (1922).

83. Boomer v. Atl. Cement Co., 257 N.E.2d 870 (1970).

broadband applications is unlikely to rise to this level. Thus, if the government “rezoned” broadcasting spectrum to prohibit broadcasting in favor of more valuable mobile broadband use during the license term, the government would likely owe the broadcasters compensation.⁸⁴ The compensation would be based on the fair market value for the balance of their license terms and any other property rights in the spectrum they may have.

For practical purposes, the government’s desire to avoid protracted litigation makes a unilateral termination of broadcasters’ licenses prior to the expiration of their eight-year terms unlikely. At the end of the license term, the government could likely rezone the spectrum without compensation because the broadcasters have relatively weak legal claims to continued property rights in the spectrum.⁸⁵

However, there is no guarantee that the government, even if it wanted to, could entirely avoid compensating the broadcasters through rezoning at the expiration of the license periods. In the unlikely event the courts deemed the broadcasters to have property interests in the spectrum for broadcasting, the government would owe them compensation for the decline in enterprise value of their organizations due to the spectrum loss. This amount is likely far more substantial than losses stemming from not being able to use the spectrum for the balance of the license period that would result from rezoning the spectrum before expiration. Also, in the extremely unlikely (but possible) scenario that the broadcasters are ultimately found to have complete property rights to use spectrum for mobile broadband, they could be entitled to the full value of the spectrum at its new enhanced value for mobile broadband use. Finally, if broadcasters are found to have no property rights, they will still likely enjoy significant due process rights.⁸⁶

As such, rezoning to reacquire the spectrum is not without legal and strategic risks to both the government and the broadcasters, and also poses significant due process challenges. Absent political considerations and based solely on legal property principles, the most likely rezoning scenario would result in the broadcasters getting no compensation assuming the government waits until the end of the

84. *FCC Report 10-201*, *supra* note 63, at 74–75. The FCC disputes this conclusion and argues that it has the right to modify spectrum licenses in the middle of the license period for the public benefit, even in the case of licenses for which the licensee has paid for the right to use the spectrum under specific terms.

85. *Ownership Rights*, *supra* note 19, at Section II.

86. *Id.* at Section VI.

license period. Therefore, while neither the government nor the broadcasters will likely pursue rezoning as the principal method for reacquiring the spectrum, the FCC may use the threat of “down zoning” or “rezoning” as a “stick” to encourage the broadcasters to negotiate a more optimal settlement in good faith. Of course, once spectrum is reclaimed the government would effectively rezone it from broadcasting to mobile broadband use. However, rezoning would not be a good primary tool for the government to reclaim the broadcasters’ spectrum in the first place.

B. Eminent Domain Provides a More Promising Framework for Determining Compensation

Eminent domain, however, may be a useful traditional property framework for fashioning an equitable solution between the FCC and the broadcasters. Eminent domain allows the government to take private property for “public use” while compensating the owner.⁸⁷ Traditionally, eminent domain is used for building schools, roads, and other public works that require large plots of land where the government cannot afford to be “held-up” by a resisting landowner who could thwart the project.

In *Kelo v. City of New London*,⁸⁸ the Supreme Court made clear that eminent domain can be invoked to transfer property from one private party to another in order to further economic development. Moreover, the earlier *Poletown Neighborhood Council v. City of Detroit*,⁸⁹ decision offers the government some deference in making the decision. It does not hold the government liable if the anticipated economic benefits do not occur as long as they are reasonably expected and were the major reason for the decision.

In the case of broadcast spectrum, the government would similarly reallocate the spectrum from one private party (the current broadcasters) to other private parties (mobile wireless broadband providers) in order to enhance the value of the spectrum to society. Hence, *Kelo* would support the use of eminent domain to acquire the underutilized television broadcast spectrum and later reallocate it for reuse by mobile broadband providers. Many analyses of the telecommunication spectrum suggest that the current use of 294 Mhz by the broadcasters is inefficient for society and could be much better

87. *Eminent Domain*, CORNELL UNIV. SCHOOL OF LAW, LEGAL INFO. INST., http://www.law.cornell.edu/wex/eminent_domain (Aug. 19, 2010, 5:15 PM) (defining eminent domain).

88. *Kelo v. New London*, 545 U.S. 469 (2005).

89. *Poletown Neighborhood Council v. Detroit*, 304 N.W.2d 455 (Mich. 1981).

used by mobile data providers.⁹⁰ *Poletown* provides the government the authority to use its discretion even in the unlikely event that the expected benefits of increased mobile broadband spectrum do not come to fruition.

C. Political Power Considerations Will Not End

While the goal of the traditional property rights/eminent domain strategy is to minimize the political aspect of the process through an appeal to established law, the process will undoubtedly remain highly political. Unfortunately, political will is a required part of any framework the government might employ. For example, an eminent domain action cannot commence without the government initially bringing a case. In fact, it would be very naïve to expect the government to adopt a straightforward eminent domain approach. This is because broadcasters would likely exert significant political pressure on government officials to avoid such an approach because it would deny broadcasters the premium buyout they seek.

1. *Payments to Broadcasters Likely to Be Larger Than Necessary*

Ultimately, these political pressures will likely result in the broadcasters getting a somewhat larger recovery than an eminent domain-type settlement because the government will need to induce them to support the process. An “even trade” will probably not be enough to get the broadcasters’ cooperation. This is particularly likely to be the case in urban areas where broadcasters are, on the whole, more profitable, and where the government needs the spectrum the most. Broadcasters are highly organized and possess a great deal of political power, their stakes are high, and their interests are almost uniformly aligned.⁹¹

2. *Eminent Domain Can Set the Framework for Broadcaster Compensation*

The existence of eminent domain as a potential solution can play a significant role in resolving the negotiation as to the level of

90. A partial list of these include: Richard H. Thaler, *Buried Treasure in Your TV Dial*, NEW YORK TIMES (February 27, 2010), <http://www.nytimes.com/2010/02/28/business/economy/28view.html>; Kim McAvoy, *FCC Begins TV Spectrum Swap*, TVNEWSCHECK, (Nov. 30, 2010), <http://www.tvnewscheck.com/article/2010/11/30/47367/fcc-begins-tv-spectrum-revamp/page/1>; *OBI Technical Paper, No. 3*, *supra* note 10 at 7; Bruce M. Owen, *Saving Mt. Wilson—and Increasing Spectrum Efficiency*, PERSPECTIVES FROM FSF SCHOLARS, Vol. 4, No. 18 (Oct. 27, 2009), http://www.freestatefoundation.org/images/Saving_Mt_Wilson_-_and_Increasing_Spectrum_Efficiency.pdf.

91. Merrill, *supra* note 17, at 281 (discussing the elements that influence a group’s power under a distributional theory).

compensation, if any, the government will owe the broadcasters to clear the spectrum for mobile broadband use. A discussion of the government's established right to acquire the spectrum via eminent domain at a small fraction of its higher mobile broadband use value would be a good starting point for the negotiations. Any increased prominence of the eminent domain option could significantly reframe the discussions to the advantage of the U.S. Treasury. On the other hand, discussions centered around the absolute value of the spectrum and the broadcasters' alleged "ownership" of the spectrum (as opposed to an interest in their license for broadcasting use and the value of the must carry rules) would likely suggest a payout to broadcasters above the market value for television broadcasting use. One of the major factors mitigating broadcaster resistance under an eminent domain approach is likely to be that they would not be economically harmed. Broadcasters would keep the majority of the value of their businesses and get a market-based buyout for the remainder. The fact that they would not be harmed combined with the threat of downzoning if they are unable to reach an agreement could significantly limit the cohesion of the group's resistance as offers from the government begin to marginally exceed the value of the business they stand to lose from turning over their broadcast licenses. Moreover, the simplicity of this option and the fact this method is generally accepted in U.S. law may also help to accelerate the pace of discussions as they could be framed around a concrete, well-established legal model as opposed to attempting to get consensus for a new alternative legal framework.

VI. Valuation Advantages of Traditional Property Law Approach

A critical principle of compensation for eminent domain and rezoning actions is that any compensation payment is based on the fair market value of the property at the time of the taking, based on its use, at that time. This principle was established by *United States v. Cors*,⁹² where the Court ruled that compensation to the owner of a tugboat that was requisitioned by the government during World War II could not include the appreciation of the value in the tugboat created by the government's increased wartime demand. In *Cors*, the Court said: "[t]hat is a value which the government itself created and hence in fairness should not be required to pay."⁹³ Assuming the

92. *United States v. Cors*, 337 U.S. 325 (1949).

93. *Cors*, 337 U.S. at 334.

government concedes property rights to broadcasters, any FCC broadcasting licenses that are not renewed would be analogous to condemned property in a traditional eminent domain action. As with the tugboat owner in *Cors*, the television broadcasting license owners would not be entitled to any surplus that might come from any new, and potentially more lucrative, use by the government such as mobile broadband applications. Valuation would instead be based on the current use for broadcasting.

A. Broadcast Spectrum Valuations are Affordable

As mentioned previously, the television broadcast industry is, as a whole, likely worth between \$60 billion and \$65 billion based on recent estimates.⁹⁴ Although the government seeks to reacquire approximately 40.8% of the broadcasters' spectrum (120Mhz of their 294 Mhz), economist Coleman Bazelon estimates the cost to the government of outright acquiring the broadcasters needed to clear 120 Mhz of spectrum nationwide at \$15.2 billion at auction or approximately only 24% of the industry's enterprise value.⁹⁵ This is because much of the spectrum allocated for television broadcasting is not licensed and remains unused in many markets and thus would not need to be reacquired from licensees.⁹⁶ Moreover, due to inefficiencies in Bazelon's reverse auction proposal,⁹⁷ including paying each bought-out broadcaster at the highest bid that is not accepted, and a relatively small pool of sellers in each market that can lead to various forms of market manipulation, an eminent domain strategy is likely to be achievable at somewhat lower valuations than Bazelon's estimates. A sensitivity analysis of such a buyout is shown in Exhibit 2 below.

However, since, approximately 10% of broadcasters' viewership is over-the-air, perhaps over 90% of television broadcasters' value lies not in their over-the-air transmission rights, but in their retransmission on cable and satellite systems. Compensating them for their full enterprise value when, on average only 10% of it is attributable to their broadcasting activity, would result in significant overcompensation.

94. *Broadcast Industry Valuation*, *supra* note 60.

95. Bazelon II, *supra* note 51.

96. Hazlett, *supra* note 12, at 5–6.

97. Bazelon II, *supra* note 51, at 19. In the reverse auction, broadcasters would submit bids for the price at which they would sell their licenses and be paid the highest bid that was not accepted. This method is designed to encourage truthfulness in the bidding process, but is likely to increase payout prices to broadcasters above fair market value.

Exhibit 2.						
Cost of Compensating Broadcast Television for Complete Business Loss (\$B)						
		Broadcasting Industry's Enterprise Value¹				
		\$55.00	\$60.00	\$65.00	\$70.00	\$75.00
% of Value Reacquired²	30.0%	\$16.5	\$18.0	\$19.5	\$21.0	\$22.5
	28.0%	\$15.4	\$16.8	\$18.2	\$19.6	\$21.0
	26.0%	\$14.3	\$15.6	\$16.9	\$18.2	\$19.5
	24.0%	\$13.2	\$14.4	\$15.6	\$16.8	\$18.0
	22.0%	\$12.1	\$13.2	\$14.3	\$15.4	\$16.5
	20.0%	\$11.0	\$12.0	\$13.0	\$14.0	\$15.0
	18.0%	\$9.9	\$10.8	\$11.7	\$12.6	\$13.5
	16.0%	\$8.8	\$9.6	\$10.4	\$11.2	\$12.0
	14.0%	\$7.7	\$8.4	\$9.1	\$9.8	\$10.5
	12.0%	\$6.6	\$7.2	\$7.8	\$8.4	\$9.0
	10.0%	\$5.5	\$6.0	\$6.5	\$7.0	\$7.5
	8.0%	\$4.4	\$4.8	\$5.2	\$5.6	\$6.0
	6.0%	\$3.3	\$3.6	\$3.9	\$4.2	\$4.5

Notes: ⁽¹⁾Represents the estimates of enterprise of the U.S. television broadcasting industry; ⁽²⁾Represents estimates of the percentage of broadcasting industry value in the broadcasters whose licenses are reacquired.

1. *Maintaining Must-Carry Could Significantly Lower Reacquisition Costs*

As mentioned above, most of the broadcasters' viewership comes from retransmission on satellite and cable systems. Thus, if the government could modify the must-carry rules to give them continued retransmission rights after they return their spectrum, broadcaster compensation for the loss of their licenses would be limited to the value of the over-the-air viewers. Using the 10% figure for over-the-air viewership and a U.S. population estimate of 285 million,⁹⁸ the proper payment to the broadcasters whose spectrum has been reacquired would be between \$2.0 billion and \$2.5 billion, including \$1.0 billion for the cost of "repacking" the remaining spectrum holders close together so as to create the contiguous blocks of nationwide spectrum mobile broadband providers find most efficient.

In addition to preserving the value of the broadcasters' assets, and thus lowering the needed buy-out price, this approach also preserves the value the broadcasters bring to their communities with their content to the 90% of their viewers who view television over cable or satellite systems. See Exhibit 3 below for a sensitivity analysis of the cost:

98. Published spectrum price per Mhz/POP calculations are generally based on 285 million people in the United States even though widely accepted estimates indicate over 309 million people in the United States. I cannot explain this discrepancy, but use the 285 million figure in this paper to ensure consistency with most published price/Mhz POP calculations.

Exhibit 3.

Cost of Compensating Broadcast Television for Spectrum Loss Only (\$B)

% of Value from Over the Air*	Enterprise Value of TV Broadcasters Surrendering Licenses				
	\$7.50	\$10.00	\$12.50	\$15.00	\$17.50
17.0%	\$2.3	\$2.7	\$3.1	\$3.6	\$4.0
16.0%	\$2.2	\$2.6	\$3.0	\$3.4	\$3.8
15.0%	\$2.1	\$2.5	\$2.9	\$3.3	\$3.6
14.0%	\$2.1	\$2.4	\$2.8	\$3.1	\$3.5
13.0%	\$2.0	\$2.3	\$2.6	\$3.0	\$3.3
12.0%	\$1.9	\$2.2	\$2.5	\$2.8	\$3.1
11.0%	\$1.8	\$2.1	\$2.4	\$2.7	\$2.9
10.0%	\$1.8	\$2.0	\$2.3	\$2.5	\$2.8
9.0%	\$1.7	\$1.9	\$2.1	\$2.4	\$2.6
8.0%	\$1.6	\$1.8	\$2.0	\$2.2	\$2.4
7.0%	\$1.5	\$1.7	\$1.9	\$2.1	\$2.2
6.0%	\$1.5	\$1.6	\$1.8	\$1.9	\$2.1
5.0%	\$1.4	\$1.5	\$1.6	\$1.8	\$1.9

Note: 10% is the most widely accept industry estimate of the amount of over-the-air television viewers. 14% is the highest commonly quoted number. The figures in this chart include a \$1.0 billion allowance for "repacking" the remaining TV broadcasters to allow for large blocks of nationwide contiguous spectrum.

2. *Over-the-Air Transmission and Must-Carry Rights Becoming Less Important to Broadcasters*

Not only are 90% of television viewers served via rebroadcast over cable and satellite not dependent on wireless spectrum, but also the broadcasters incur only nominal costs to reach them. Additionally, the "must-carry" and SHVA rules are slowly becoming less relevant to the broadcasting industry as a whole. Many broadcasters have elected to waive such rights so as to be able to negotiate carriage on a fee basis with cable and satellite operators. The FCC estimates that only 37% of broadcasters currently rely on must-carry rights to gain carriage.⁹⁹ The others waive these rights and sell their content to the cable and satellite companies for a fee. Thus, the broadcasters either pay nearly nothing or actually receive payment for broadcasting to approximately 90% of their audience. The broadcasters' cost of serving the 10% of viewers who receive local broadcast television over-the-air is therefore disproportionately high as it requires a significant investment in broadcasting infrastructure as well as ongoing maintenance and electricity costs. In fact, given the small percentage of people who actually view over-the-air television, and the cost associated with providing it, many broadcasters could actually end up being *more* profitable by abandoning over-the-air broadcasting. Additionally, over-the-air

99. *Spectrum*, supra note 7, at 8.

viewers tend to have lower incomes,¹⁰⁰ are more likely to be over age 65,¹⁰¹ and to live in rural areas¹⁰² where cable systems are less prevalent. These demographic characteristics make the broadcasters' over-the-air viewers less attractive to advertisers than their viewers on cable or satellite systems. Therefore, due to the high costs of serving over-the-air viewers and their unfavorable demographics for advertisers, the value of these 10% of viewers is likely to be much less than 10% of the industry's overall value. These trends support the use of conservative valuation metrics to compensate broadcasters for over-the-air subscribers' losses and any loss or weakening of must-carry rights.

3. *Over-the-Air Audience Remains Reasonable Proxy for Spectrum Valuation*

The networks, however, would likely argue that, because their economic model depends on advertising (as opposed to subscription) revenue, they will no longer be able to compete for *any* content against the cable companies if they lose their over-the-air customer base, even though that represents only about 10% of their total audience. They will argue that content companies will sell directly to the cable and satellite companies if the networks cannot deliver the incremental estimated 10% of the population that cable and satellite do not reach. This is a valid concern for the broadcasters, but the number of over-the-air television viewers has been steadily declining each year. This continuing decline is likely to be inevitable regardless of what happens to the spectrum.¹⁰³ Moreover, television broadcasters have significant advantages even without spectrum. There is far more content produced than cable and satellite systems make available on their networks, particularly niche programming that typically has difficulty getting carriage. Even without the advantage of a monopoly on the 9% to 14% of the population who watch television over-the-air, many content providers would likely be

100. Mark. L. Goldstein, Director, *DIGITAL BROADCAST TELEVISION TRANSITION: ESTIMATED COST OF SUPPORTING SET-TOP BOXES TO HELP ADVANCE THE DTV TRANSITION*, U.S. GOV'T ACCOUNTABILITY OFFICE, 4 (2005).

101. *TRANSITION IN TROUBLE: ACTION NEEDED TO ENSURE A SUCCESSFUL DIGITAL TELEVISION TRANSITION*, LEADERSHIP CONFERENCE ON CIVIL RIGHTS, 12 (2008) [hereinafter *Civil Rights*].

102. Watson, *supra* note 53.

103. Since 2005, broadcast TV station revenues have declined by 26%, and overall industry employment has declined as well. *Spectrum*, *supra* note 7, at 14 (citing Press Release, BIA/Kelsey Expects TV Station Revenues to End Year Lower Than Anticipated; Levels Last Seen in 1990s Predicted Through 2013 (Dec. 22, 2009)).

eager to sell to broadcasters to ensure they are carried, via retransmission, on certain cable and satellite systems. Additionally, many of the local broadcasters add value by producing their own local content (particularly local news) over which they often effectively (but not legally) have a monopoly and which advertisers, viewers and cable systems find desirable.

The advantages to broadcasters of eliminating the expense of broadcasting is likely to somewhat offset the possible disadvantages of losing a monopoly serving the over-the-air viewers. Hence, the percentage of viewing audience that receives the broadcasts over-the-air is likely to be a reasonable proxy for the value of the broadcasting licenses. FCC economists, however, could adjust this estimate as considerations of economic equity might dictate.¹⁰⁴

B. Higher Value for Mobile Broadband Usage Benefits U.S. Treasury

Mobile broadband spectrum is much more valuable than broadcasting spectrum. It has sold for as much as \$1.36 Mhz/pop.¹⁰⁵ On the surface, this differential could provide \$46.5 billion¹⁰⁶ in gross revenue to the federal government if it were to re-auction 120 Mhz of the television broadcasters' 294 Mhz of spectrum for mobile broadband use. This sum dwarfs the roughly \$3.4 billion to \$6.4 billion the government would need to provide affected over-the-air viewers with subsidized cable or satellite television service and also to compensate the broadcasters for the loss of value when invoking eminent domain on the broadcasters and to repack the remaining broadcasters and also to subsidize cable and satellite subscriptions for affected viewers (see Exhibit 1 in Section II.C.3 and Exhibit 3 in Section V.A.1).

However the economic reality is that some elasticity of demand will occur as additional spectrum is auctioned, particularly large

104. Attempting to define the precise value of a broadcaster's spectrum licenses in relation to its overall enterprise value is beyond the scope of the paper—that project is best left to FCC economists—however, the percentage of overall viewers is likely to be a rough working proxy. *Spectrum*, *supra* note 7, at n.87.

105. Average price per Mhz/POP from the FCC's March 2008 700 Mhz license in which \$19.12 billion was bid for 52 Mhz (excluding the D block as the bid did not meet the minimum reserve bid) covering 285 million people or \$1.29 per Mhz/POP. If one also excludes the E band which sold at \$0.74 per Mhz/POP, arguably discounted as it was auctioned as less desirable "unpaired" spectrum, the price would have been \$1.36 per Mhz/Pop. *Auction 73: 700 MHz Band*, FCC, available at http://wireless.fcc.gov/auctions/default.htm?job=auction_factsheet&id=73, (last visited Oct. 30, 2011).

106. The calculation is: $\$1.36 \text{ Mhz/POP} * 285 \text{ million people in US} * 120 \text{ Mhz auctioned} = \46.512 billion .

amounts such as 120 Mhz.¹⁰⁷ Each incremental slice of spectrum will sell for less than the amount received for the prior amount of spectrum. The market is also quite fluid and much will depend on the financial conditions of the likely bidders at the time of the auctions, their access to capital, and the exact state of the projections for broadband growth. On one hand, the recent success of the iPhone 4, the iPad 2 the Android-based smart phones, and the general growth in mobile broadband applications, would indicate greater demand for wireless broadband and a higher price. On the other hand, the recent economic downturn could reduce demand and push bidding lower. In this context, an initial price projection of \$1.20 to \$1.40 per Mhz/POP with an elasticity of demand of between -1.1 to -1.3 seems reasonable and in line with other estimates.¹⁰⁸ The elasticity indicates that a 1.1% to 1.3% increase in quantity will result in a 1.0% decrease in price for spectrum. This implies than an auction of 120 Mhz would yield an average price of \$1.02 and \$1.22 Mhz/POP raising \$34.9 billion to 41.7 billion. (See Exhibit 4 of a sensitivity analysis of potential revenue per Mhz/POP raised under different initial price and elasticity of demand assumptions and see Exhibit 5 for an analysis of amounts that could be raised by an auction of various sizes and price per Mhz/POP assumptions). Under any reasonable assumption, however, an eminent domain solution would provide significant additional funds well beyond the \$3.4 to \$6.4 billion needed to compensate broadcasters and viewers.

Exhibit 5.
Auction Proceeds Analysis Based on \$ per Mhz/POP and Amount Sold (\$B)*

		Amount of Spectrum Sold (Mhz)				
		80	100	120	140	160
Price per Mhz/POP	\$1.38	\$31.5	\$39.3	\$47.2	\$55.1	\$62.9
	\$1.34	\$30.6	\$38.2	\$45.8	\$53.5	\$61.1
	\$1.30	\$29.6	\$37.1	\$44.5	\$51.9	\$59.3
	\$1.26	\$28.7	\$35.9	\$43.1	\$50.3	\$57.5
	\$1.22	\$27.8	\$34.8	\$41.7	\$48.7	\$55.6
	\$1.18	\$26.9	\$33.6	\$40.4	\$47.1	\$53.8
	\$1.14	\$26.0	\$32.5	\$39.0	\$45.5	\$52.0
	\$1.10	\$25.1	\$31.4	\$37.6	\$43.9	\$50.2
	\$1.06	\$24.2	\$30.2	\$36.3	\$42.3	\$48.3
	\$1.02	\$23.3	\$29.1	\$34.9	\$40.7	\$46.5
	\$0.98	\$22.3	\$27.9	\$33.5	\$39.1	\$44.7
	\$0.94	\$21.4	\$26.8	\$32.1	\$37.5	\$42.9
	\$0.90	\$20.5	\$25.7	\$30.8	\$35.9	\$41.0

*As the U.S. Government seeks to clear 500Mhz for mobile broadband by 2020 (300 over the next five years), other spectrum may be added to any auction thus increasing the size of the auction to more than 120 Mhz. Alternatively, the spectrum may be auctioned in smaller pieces over a period of time. The figures in this analysis do not include compensation to broadcasters for the loss of spectrum which are illustrated separately in Exhibit 2.

107. Although the National Broadband Plan recommends an auction of only 120 Mhz of television spectrum to reach its initial target of increasing broadband spectrum 300 Mhz in five years the FCC has not yet determined the size and timing of the auction process(es).

108. Bazelon I, *supra* note 60, at 5. Economist Coleman Bazelon suggests a base value of \$1.00 and an elasticity of demand of -1.2. Given the recent success of the wireless broadband products and services and the partial stock market recovery since his October 2009 article, a base value of \$1.30 seems reasonable. However, economic conditions could vary widely between now and any future auction date.

Exhibit 4.
Net Price per Mhz/POP vs. Elasticity of Demand & Initial Price Assumptions

		Elasticity of Demand - 120 Mhz Auction Size				
		-1.0	-1.1	-1.2	-1.3	-1.4
Initial Price Per Mhz/POP	\$1.60	\$1.34	\$1.36	\$1.38	\$1.39	\$1.41
	\$1.55	\$1.30	\$1.32	\$1.34	\$1.35	\$1.36
	\$1.50	\$1.25	\$1.27	\$1.29	\$1.31	\$1.32
	\$1.45	\$1.21	\$1.23	\$1.25	\$1.26	\$1.28
	\$1.40	\$1.17	\$1.19	\$1.21	\$1.22	\$1.23
	\$1.35	\$1.13	\$1.15	\$1.16	\$1.18	\$1.19
	\$1.30	\$1.09	\$1.10	\$1.12	\$1.13	\$1.14
	\$1.25	\$1.05	\$1.06	\$1.08	\$1.09	\$1.10
	\$1.20	\$1.00	\$1.02	\$1.03	\$1.05	\$1.06
	\$1.15	\$0.96	\$0.98	\$0.99	\$1.00	\$1.01
	\$1.10	\$0.92	\$0.93	\$0.95	\$0.96	\$0.97
	\$1.05	\$0.88	\$0.89	\$0.90	\$0.91	\$0.92
	\$1.00	\$0.84	\$0.85	\$0.86	\$0.87	\$0.88

This solution, based on traditional property rights principles, would enable the government to “recapture” the spectrum at a small fraction of the \$1.02–\$1.22 Mhz/POP it could get for the spectrum if reauctoned for mobile broadband. The difference could yield a profit to the U.S. Treasury of approximately \$28.5 billion to \$38.3 billion after paying \$3.4 billion to \$6.4 billion to provide affected viewers with a subsidized alternative and to compensate the broadcasters if 120 Mhz is auctioned. See Exhibit 6 below for a breakdown of this analysis.

Exhibit 6.				
Summary of 120 Mhz Broadband Reallocation Economics				
	In \$ Billions		Per Mhz/POP	
	High	Low	High	Low
Revenue from Auction ¹	\$41.7	\$34.9	\$1.22	\$1.02
<i>Costs:</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>
Subsidizing affected viewers ²	(\$1.6)	(\$3.3)	(\$0.05)	(\$0.10)
Compensate Broadcasters ³	(\$1.8)	(\$3.1)	(\$0.05)	(\$0.09)
Total Costs	(\$3.4)	(\$6.4)	(\$0.10)	(\$0.19)
Net Profit ⁴	\$38.3	\$28.5	\$1.12	\$0.83

¹ See Exhibit 5; ² See Exhibit 1; ³ See Exhibit 3; ⁴ This calculation does not include the potentially much larger benefits to society from access to greater broadband access.

Although the National Broadband Plan recommends initially reallocating only 120 Mhz¹⁰⁹ of broadcasting spectrum, it is possible the auction of television spectrum could be combined with auctions of other spectrum to reach the FCC’s goal of 500 Mhz for mobile broadband services by 2020. This would increase the auction size and the impact of the elasticity of demand. Alternatively, the government

109. *Spectrum*, *supra* note 7, at 2.

may divide the auction into multiple smaller ones that could reduce such impact. The eminent domain solution could be also used as a principled solution for the government to reclaim additional television broadcast spectrum in the future.

VII. Conclusion: All Roads Lead to an Eminent Domain Framework

The government must determine an effective strategy for reallocating spectrum in order to make broadband more readily available and also generate significant revenue for the U.S. Treasury. The challenge is to find a reasonable and efficient mechanism for removing the television broadcasters from the spectrum. For political and strategic reasons, the government has effectively conceded certain property rights to the television broadcasters through its statements that it will rely on a “voluntary” transition process to reclaim its television broadcasting spectrum and reallocate it for mobile broadband use. The government needs to implement a solution that appears “fair” to television broadcasters and also ensures large blocks of contiguous spectrum for mobile broadband and does not waste government assets. The only solution that meets all of these needs is a buyout of the broadcasters at the market value of their spectrum assets—a price that can be reduced through continued must-carry privileges and other options. Given that the government has effectively conceded (or has decided to act as though it is conceding) certain property rights, an eminent domain and zoning model is a convenient and tested framework to effect such a solution. Nevertheless, the government’s ability to curtail the broadcasters’ spectrum rights by “down zoning” their licenses would provide a meaningful threat (the “stick”) to encourage the television broadcasters to accept a fair market offer from the government (the “carrot”).

The television broadcasters are a politically powerful group. They are certain to resist any transaction that does not yield a substantial premium for them despite the lack of a convincing argument that they are entitled to any property rights after their current licenses expire. A politically influenced payment that slightly exceeds fair market value may be the most expeditious solution to moving the television broadcasters off the spectrum to make room for the higher value mobile broadband applications, which will ultimately benefit society as a whole. This result would further the societal goals of obtaining more readily available broadband and generating revenue for the U.S. government while placating the potential

concerns of the broadcasters and viewers. Moreover, it would enable the government to avoid probable prolonged litigation over property rights, and preserve incentives for communications providers to invest in FCC licenses and build out new services.

Longer term, however, the government needs to think about how to avoid situations where it is forced to buy back its own assets which it previously had not sold or intentionally given away.