

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

In the Matter of)	
)	
Policies Regarding Mobile Spectrum)	WT Docket No. 12-269
Holdings)	

REPLY COMMENTS OF VERIZON WIRELESS

**CELLCO PARTNERSHIP d/b/a
VERIZON WIRELESS**

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SUMMARY

The spectrum screen framework has enabled the wireless market to flourish with multiple providers and successive next-generation, bandwidth-intensive deployments, all to the benefit of consumers. While some parties assert that the screen has led to reduced competition, they supply no data or other factual support for that claim, and the facts undercut it. Their general assertions about the wireless industry fail to demonstrate why the Commission should replace the screen with the far more intrusive and complex restrictions they propose.

The Commission should retain a single spectrum screen, while correcting its application to provide more certainty to the market, and updating it to include all spectrum that is suitable and available for mobile services. Specifically, it should take two actions:

- In order to provide the certainty needed to promote efficient secondary market transactions, return the screen to its roots as a safe harbor, so that companies are not subject to further spectrum-related review where their spectrum holdings remain below the screen. The Commission's recent administration of the screen has deviated from that safe harbor construct by reviewing spectrum acquisitions that fall below the screen. It should make clear that the screen is merely a trigger for review of spectrum acquisitions that *exceed* it. In those areas where the screen is exceeded, the Commission would

examine competitive conditions and could take steps to remedy competitive harm or allow spectrum acquisitions where it determines no competitive harm would result.

Numerous commenters support the benefits of a safe harbor in providing certainty to the market.

- Update the amount of spectrum included in the screen to reflect the reality that the screen does not today include a substantial amount of spectrum – nearly 200 MHz – all of which is suitable and available for mobile services and much of which is already in use.

Commenters agree with adding certain MSS bands to the screen, including the S Band MSS spectrum recently authorized for full terrestrial use as the AWS-4 band. The remaining BRS and EBS spectrum clearly should also be counted. It is not only both suitable and available for use (and thus qualifies for inclusion under Commission’s own formulation for the screen), but it is *already* being used to provide mobile broadband services nationwide. Sprint’s decision to purchase Clearwire’s spectrum for the stated purpose of providing a “more robust, higher-capacity mobile broadband network that can compete more effectively in the market place” further underscores why this spectrum must be added to the screen.

A few parties ask the Commission to convert the current single screen into a far more intrusive, complicated and restrictive regulatory tool. The record, however, provides no factual basis for doing so. Advocates of more regulation supply no data as to why the current screen, properly computed and applied, is not sufficient for the Commission to identify transactions that would result in demonstrable competitive harm. Specifically:

- The Commission should not impose a flat cap. There is broad opposition to such a limit, because the screen is fully capable of flagging competitive issues that may result from

spectrum aggregation, without the distorting and overbroad restrictions inherent in a cap. Parties correctly observe that there is no valid basis to impose such a rule.

- It should not create additional band-specific screens or “weight” each band because such complications are both unsound and unworkable. The two economist declarations submitted in this proceeding explain why such mechanisms lack an economic rationale and would distort the market in ways that harm consumer welfare. (In contrast, parties advocating these more intrusive and complex proposals submitted no economic support.) The Commission should reject calls for a secondary screen or cap on spectrum below 1 GHz, which fail to take into account the capacity and other benefits of spectrum above 1 GHz. As the attached declaration from Verizon’s Executive Director of Network Strategy demonstrates, higher and lower bands have a wide range of advantages and disadvantages that depend on a carrier’s desired coverage area, anticipated traffic levels, and device choices. There is no technical or other basis to evaluate a carrier’s spectrum holdings differently based on the particular frequencies of that spectrum. Weighting of different bands would similarly be unavoidably arbitrary, could not reflect the continually fluctuating values of spectrum, and would not fulfill the Commission’s objective to provide the market with increased certainty.
- It should not impose limitations on spectrum acquired at auction, which could depress auction participation and, in the case of the upcoming incentive auction, place funding for FirstNet and deficit reduction at risk.

I. THE MARKET DEMONSTRATES THAT MORE INTRUSIVE REGULATION IS NOT WARRANTED.

Chairman Genachowski recently stated, “American progress in mobile over the past four years is the fastest we’ve ever seen.”¹ He also noted, “[t]hanks to the work of innovative American companies, software, mobile, broadband providers, and others – and to smart government policies – the mobile revolution has kicked into overdrive and America’s mobile story is ... one of comeback and U.S. leadership.”² Among these “smart government policies” is the spectrum screen, which generally has allowed spectrum to flow freely in the marketplace to the benefit of innovation, competition, and consumer welfare.

Indeed, wireless consumers have benefited immensely under nearly every performance metric since the Commission sunset the inflexible spectrum cap and replaced it with a spectrum screen. As commenters observe, there is no evidence that the current spectrum screen has harmed consumers or foreclosed providers from acquiring spectrum,³ despite claims that the spectrum market requires more government intervention.⁴

Consumers have benefitted from expanded coverage from multiple providers, lower prices, exploding usage, increased carrier investment, and massive innovation. First, coverage has expanded significantly in the spectrum screen era: “[T]oday nearly as large a percentage of

¹ Julius Genachowski, Chairman, FCC, Prepared Remarks to University of Pennsylvania – Wharton, at 2 (Oct. 4, 2012) (“Genachowski Wharton Remarks”), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-316661A1.pdf.

² *Id.* at 1.

³ *See, e.g.*, AT&T Comments at 70; Tech Freedom Comments at 10; Telecommunications Industry Association (“TIA”) Comments at 4.

⁴ *See, e.g.*, Computer & Communications Industry Association (“CCIA”) Comments at 11-16; Competitive Carriers Association (“CCA”) Comments at 11-14; Free Press Comments at 14-19; Jon M. Peha Comments for Public Knowledge (“Public Knowledge”) at 2; NTCH Comments at 1-4; Rural Telecommunications Group (“RTG”) Comments at 3, 9, 11; Sprint Nextel Comments at 10-13; Writers Guild of America, West, Inc. (“Writers Guild”) Comments at 9.

residents lives in an area served by five or more providers as lived in areas served by three or more providers in 2000.”⁵ The Commission’s own data reflect that, in 2010, nearly 95 percent of the total U.S. population (excluding those on Federal lands) was covered by four or more facilities-based providers of mobile wireless service; almost 90 percent was covered by five or more facilities-based providers; and almost 77 percent was covered by six or more facilities-based providers.⁶ Furthermore, as of 2010, approximately 193 million people, or nearly 68 percent of the total population, were covered by four or more facilities-based providers of mobile broadband service.⁷

Second, since the Commission sunset the spectrum cap, revenue per voice minute, a proxy for mobile voice pricing, has dropped by more than half.⁸ Indeed, average revenue per minute in the U.S. is nearly 70 percent lower than the averages of 27 other OECD countries.⁹ In addition, the number of mobile wireless connections more than doubled, to over 290 million, from the spectrum cap days to 2009.¹⁰ And in the last year alone, Americans used more than 1.1 trillion megabytes of data, an increase of 104 percent over the previous 12 months.¹¹ Finally,

⁵ Mark A. Israel and Michael L. Katz, Economic Analysis of Public Policy Regarding Mobile Spectrum Holdings, ¶ 58 (Nov. 28, 2012) (“Katz-Israel Decl.”), *appended to AT&T Comments as Att. A.*

⁶ *Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, Fifteenth Report, 26 FCC Rcd 9664 at 9705 ¶ 45 & Table 6 (2011) (“*Fifteenth Report*”).

⁷ *Id.* at 9706 ¶ 46 & Table 7. These figures do not include holders of spectrum within a given area that are not yet providing service, MVNO providers, or MSS providers, all of whom have exerted or will exert additional competitive pressures on the market.

⁸ *Fifteenth Report*, 26 FCC Rcd at 9783, Table 20.

⁹ Glen Campbell, *Bank of America Merrill Lynch, Global Wireless Matrix 1Q 2012: What Happened to Revenue Growth?* (Apr. 19, 2012).

¹⁰ *Fifteenth Report*, 26 FCC Rcd at 9672.

¹¹ Press Release, CTIA-The Wireless Association®, Consumer Data Traffic Increased 104 Percent According to CTIA-The Wireless Association® Semi-Annual Survey (Oct. 11, 2012),

capital expenditures by wireless service providers, totaling more than \$125 billion from 2004-2009, have fueled the mobile revolution through network expansion and next-generation deployments.¹²

Third, a review of the secondary market demonstrates that spectrum is available and that carriers of all sizes – including smaller carriers – actively participate in the spectrum market. For example, 346 of the 402 non-*pro forma* transactions (86%) in the last two years involved non-nationwide licensees transferring or assigning spectrum to other carriers.¹³ Similarly, 255 of the 402 non-*pro forma* transactions (63%) involved the transfer or assignment of spectrum to non-nationwide licensees.¹⁴ These transactions belie claims that smaller carriers lack sufficient spectrum (otherwise they would not be transferring or assigning spectrum so frequently) or have been foreclosed from accessing needed spectrum.¹⁵

Those parties who advocate additional or different regulation supply no countervailing data or economic analysis, let alone any evidence that demonstrates why the existing screen approach fails to identify transactions that could cause competitive harm. As discussed below, while the screen should be made more predictable and reflective of the current competitive market, there is no basis for abandoning a policy that has produced real consumer benefits and

<http://www.ctia.org/media/press/body.cfm/prid/2216> (reporting results from July 2011-June 2012).

¹² *Fifteenth Report*, 26 FCC Rcd at 9792 Table 23.

¹³ See Universal Licensing System Database Downloads, <http://wireless.fcc.gov/uls/index.htm?job=transaction&page=weekly> (last visited Dec. 10, 2012). Figures reflect the total number of non-*pro forma* assignment and transfer of control applications consummated between Dec. 1, 2010 and November 30, 2012, not the total number of licenses or service areas in which spectrum was assigned or transferred. The radio services included in this calculation are: 700 MHz Band (upper and lower), AWS, Broadband PCS, BRS, Cellular, and SMR (including auctioned licenses, and site-based common carrier licenses).

¹⁴ *Id.*

¹⁵ See CCA Comments at 6-7; RTG Comments at 11.

allowed the secondary market for spectrum to flourish, benefitting all providers. As the Chairman noted, “We must continue with [spectrum] policies that have worked, reforming and improving them as we go.”¹⁶

II. THE RECORD SUPPORTS A REGULARLY UPDATED SPECTRUM SCREEN THAT OPERATES AS A SAFE HARBOR.

The record reflects broad support for continued use of a spectrum screen to assess mobile spectrum holdings,¹⁷ with two modifications to provide clearer and more predictable rules of the road. For example, MetroPCS calls the current spectrum screen framework “appropriate” and “suited to a dynamic industry, like the wireless industry,” but like others expresses concern with the current unpredictable manner in which the screen is adjusted.¹⁸

First, numerous commenters agree that the best way to restore predictability and maintain flexibility is to return the screen to its roots as a safe harbor.¹⁹ They point out that the Commission has departed from the safe harbor construct by reviewing transactions that do not exceed the screen, which undermines the screen’s purpose as a filter to flag potentially problematic spectrum holdings while enabling the Commission to avoid spending resources to evaluate holdings that raise no material risk of competitive harm. As Verizon Wireless explained in its initial comments, under this approach, applicants will not be subject to further

¹⁶ Genachowski Wharton Remarks at 8.

¹⁷ See, e.g., AT&T Comments at 21-23; Clearwire Comments at 1, 4-5; Communications Liberty & Innovation Project (“CLIP”) Comments at 2-3; CTIA Comments at 5-6; Internet Innovation Alliance (“IIA”) Comments at 1-4; MetroPCS Comments at 2-3, 7-8; Mobile Future Comments at 3-5; Tech Freedom Comments at 8-9; TIA Comments at 3-4; Verizon Wireless Comments at 3, 5-17.

¹⁸ See MetroPCS Comments at 7-8; see also, e.g., CLIP Comments at 2-4.

¹⁹ See, e.g., AT&T Comments at 4-5, 12-13, 21-23, 54-55; CLIP Comments at 8; CTIA Comments at 5-6; Mobile Future Comments at 3-5; see also Verizon Wireless Comments at 3, 5-10; Declaration of Allan L. Shampine, Ph.D, ¶¶ 7, 13, 27 21 (Nov. 26, 2012) (“Shampine Initial Decl.”), appended to Verizon Wireless Comments.

spectrum-related review in below-screen markets where there is no risk of competitive harm, but the Commission retains flexibility to examine competitive conditions in markets where the screen is exceeded. As Mobile Future explains:

Going forward, the screen should be applied as originally intended: As an absolute safe harbor when spectrum holdings fall below a specified threshold, with overages subject to case-specific assessment.... A flexible “safe harbor/case-by-case analysis” approach will provide some certainty while also permitting spectrum aggregation above specified amounts where the public interest warrants.²⁰

Second, commenters also agree that the screen should be updated regularly²¹ and applied consistently.²²

With these two changes, the screen will provide companies with more assurance as to their ability to acquire spectrum needed to meet customers’ growing needs, while continuing to enable the Commission to identify spectrum acquisitions that may raise competitive concerns and take action, if appropriate, to protect competition.

III. ADDITIONAL SPECTRUM, INCLUDING EBS AND REMAINING BRS SPECTRUM, SHOULD BE INCLUDED IN THE SPECTRUM SCREEN

The Commission should update the screen to include the additional spectrum that is suitable and available for mobile broadband/telephony use but is not currently counted. As Verizon Wireless explained in its initial comments, 212 MHz of spectrum in three bands – WCS, MSS, and BRS/EBS – meets the Commission’s tests for inclusion in the screen because it is both

²⁰ Mobile Future Comments at 5.

²¹ See, e.g., AT&T Comments at 44-46; Clearwire Comments at 5; CTIA Comments at 6; MetroPCS Comments at 3; Mobile Future Comments at 6-7, 11; Sprint Nextel Comments at 10 n. 19; T-Mobile Comments at 13-14; Tech Freedom Comments at 9; United States Cellular Corporation (“U.S. Cellular”) Comments at 4; Verizon Wireless Comments at 18-19, 27-28.

²² See, e.g., AT&T Comments at 20-21; CLIP Comments at 2, 5; CTIA Comments at 6; IIA Comments at 3-4; MetroPCS Comments at 2-3, 8; Tech Freedom Comments at 8-9; Verizon Wireless Comments at 13.

suitable and available. In its recent order approving AT&T's acquisition of WCS licenses, the Commission took the first step towards including this spectrum by adding 20 MHz of WCS spectrum to the screen.²³ The Commission should also add both 40 MHz of AWS-4 spectrum and 19.275 MHz of Big LEO spectrum. Indeed, the Commission recently converted the MSS S Band to terrestrial use (the new "AWS-4" band).²⁴ That order confirms that the AWS-4 spectrum is both suitable and available for mobile services. Other parties agree.²⁵

The most glaring omission from the current screen is the remaining BRS spectrum and the EBS spectrum. As Verizon Wireless showed, 111.625 MHz of this spectrum should be added to the 55.5 MHz of BRS that is currently counted. While Clearwire and Sprint claim that the reasons to exclude the EBS and remaining BRS spectrum (which they hold) "remain unchanged,"²⁶ in fact there have been significant changes that cannot be squared with excluding this spectrum. As discussed below, the EBS/BRS transition to a mobile band plan is overwhelmingly complete, Clearwire has access to significant spectrum in the EBS and BRS bands and has deployed mobile broadband across the country, and Sprint is acquiring Clearwire and plans "full utilization" of this spectrum to provide competitive wireless broadband services. These facts demonstrate that circumstances have changed and it is past time to add EBS and the remaining BRS spectrum to the screen.

²³ *Applications of AT&T Mobility Spectrum LLC, New Cingular Wireless PCS, LLC, Comcast Corporation, Horizon Wi-Com, LLC, NextWave Wireless, Inc., and San Diego Gas & Electric Company For Consent To Assign And Transfer Licenses*, Memorandum Opinion and Order, FCC 12-156, ¶ 31 (Dec. 18, 2012) ("AT&T WCS MO&O").

²⁴ *See Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, Report and Order and Order of Proposed Modification, FCC 12-151 (Dec. 17, 2012).

²⁵ *See, e.g.*, AT&T Comments at 42-43; Mobile Future Comments at 8-11; Verizon Wireless Comments at 22-27.

²⁶ *See* Clearwire Comments at 5-6; Sprint Nextel Comments at 13 n.26.

The Commission has not analyzed whether to include EBS spectrum in the screen since 2008, and the use of EBS/BRS spectrum has materially changed since then. At that time, the transition of the 2.5 GHz EBS/BRS band plan to enable mobile broadband was only 68 percent complete.²⁷ Today, the transition is complete in more than 98 percent of the markets across the country, making the spectrum suitable and available in the vast majority of the nation.²⁸

In 2008, the Commission expressed concern that certain requirements complicated the use of EBS spectrum for commercial purposes (*i.e.*, leasing rules designed to ensure the educational character of EBS services and site-based licensing and associated white spaces) and warranted continued exclusion.²⁹ These requirements, however, have not deterred Clearwire from aggressively deploying mobile broadband in the 2.5 GHz band. Whereas in 2008 it had not yet deployed 4G service, Clearwire became the first company to deploy a 4G network using WiMAX technology in 2009,³⁰ and since then has aggressively deployed 4G in markets across the country. Today, Clearwire's 4G network covers over 130 million people in approximately 80 markets.³¹ These deployments leveraged Clearwire's licensed BRS and leased EBS holdings

²⁷ See *Sprint Nextel Corporation and Clearwire Corporation*, Memorandum Opinion and Order, 23 FCC Rcd 17570 at 17597-98 ¶ 66 (2008) (“*Sprint Nextel-Clearwire Order*”) (noting that the transition had been completed in 337 out of 493 Basic Trading Areas). Indeed, when the Commission first decided to exclude EBS from the spectrum screen it noted that the transition of 2.5 GHz spectrum to a mobile broadband band plan was in its infancy. See *id.* at 17597 ¶ 65 (citing *Nextel Communications, Inc. and Sprint Corporation*, Memorandum Opinion and Order, 20 FCC Rcd 13967 at 14022 n.338 (2005)).

²⁸ FCC, Universal Licensing System, License Search (last viewed Jan. 3, 2013); FCC Electronic Comment Filing System, WT Docket No. 06-136 (last viewed Dec. 28, 2012).

²⁹ *Sprint Nextel-Clearwire Order*, 23 FCC Rcd at 17599 ¶ 71.

³⁰ See *Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, Fourteenth Report, 25 FCC Rcd 11407 at 11485 ¶ 117 (2010) (noting that Clearwire launched commercial 4G mobile WiMAX service in Portland, Oregon in January 2009).

³¹ See Clearwire, Our Network, <http://www.clearwire.com/company/our-network> (last visited Jan. 4, 2013).

across the 2.5 GHz band – what Clearwire itself describes as “approximately 140 MHz of spectrum on average across [its] national spectrum footprint and approximately 160 MHz of spectrum on average in the 100 largest markets,” deployments that “enable[] [it] to offer [its] subscribers significant mobile data bandwidth.”³² This is of course far more spectrum than the 55.5 MHz of BRS spectrum currently included in the screen.

The educational purpose of the EBS spectrum and the related leasing rules – the five percent capacity reservation³³ – have not precluded the use of EBS spectrum for mobile telephony/broadband services. As Clearwire explains in its initial comments, “[t]o support its network deployment, Clearwire owns BRS licenses and leases excess capacity from other BRS and EBS licensees. As part of its relationship with its EBS lessors, Clearwire assists its EBS lessors in meeting their obligations under FCC rules to use their spectrum to provide essential educational services to schools and colleges across the country.”³⁴ For example, the five percent reservation may be met by providing capacity on the mobile broadband network.³⁵ These long-term EBS leases, moreover, often extend far longer than the right to use spectrum in other bands, which can be limited to ten- or fifteen-year license terms. Further, the site-based character of EBS licensing and associated white spaces is not a reasonable basis to exclude the spectrum,³⁶ as

³² Clearwire Corp. Form 10-K, at 14 (Feb. 16, 2012) (for period ending Dec. 31, 2011).

³³ 47 C.F.R. § 27.1214(b)(1).

³⁴ Clearwire Comments at 3.

³⁵ In its initial comments, Verizon Wireless called for the Commission to include in the screen 111.625 MHz of EBS spectrum – 95 percent of the 117.5 MHz of EBS spectrum that is available for commercial use. Verizon Wireless Comments at 23.

³⁶ *Sprint Nextel-Clearwire Order*, 23 FCC Rcd at 17599 ¶ 71.

the Commission already includes other types of spectrum in the screen that are site-based with white space gaps, *e.g.*, cellular spectrum.³⁷

The other reasons given to exclude EBS and the remaining BRS spectrum from the screen do not withstand scrutiny. First, even though the Middle Band Segment (“MBS”) of EBS/BRS is still used in some areas for high-powered video service, only a few such systems remain in the MBS. Thus, the diminished threat of interference no longer justifies a broad exclusion of the MBS spectrum. Nor is the exclusion of MBS from the spectrum screen because of a few remaining high-power video stations consistent with overall spectrum screen policy, as other bands that can be used for high powered broadcasts (*i.e.*, Lower 700 MHz C, D, and E Block spectrum) are included in the screen.³⁸ Similarly, although the J and K guard bands are assigned in small increments and are secondary to high-powered video systems in the MBS, the number of such high powered systems nationwide is, as noted, very limited, and commercial operators can combine these narrow channels to provide mobile telephony/broadband services. And the fact that Clearwire today successfully uses BRS Channel 1 to provide mobile services to millions of Americans negates any claim that the screen should exclude BRS Channel 1 because the 2496-2500 MHz band is shared with MSS, BAS and fixed microwave licensees.³⁹

³⁷ See AT&T Comments at 41 & n.118. The Commission is also considering a range of proposals for rapidly licensing these EBS white spaces. See *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission’s Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Third Order on Reconsideration and Sixth Memorandum Opinion and Order and Fourth Memorandum Opinion and Order and Second Further Notice of Proposed Rulemaking and Declaratory Ruling, 23 FCC Rcd 5992 at 6060-68 ¶¶ 181-204 (2008).

³⁸ See AT&T Comments at 39-40.

³⁹ See Letter from Cathleen A. Massey, Clearwire Corp., to Marlene H. Dortch, FCC, WT Docket No. 03-66, RM-11614, Attachment at 3, 4 (filed Oct. 19, 2012) (“CLWR currently operates WiMAX and pre-WiMAX technologies in the 2496-2500 MHz band”).

Most recently, Sprint's announcement that it will acquire full ownership of Clearwire demonstrates that Clearwire's 2.5 GHz spectrum – including its leased EBS spectrum – is fully suitable and available for mobile broadband. As Sprint explained to the public, "Clearwire's spectrum, when combined with Sprint's, will provide Sprint with an enhanced spectrum portfolio that will strengthen its position and increase competitiveness in the U.S. wireless industry. Sprint's Network Vision architecture should allow for better strategic alignment and *the full utilization and integration of Clearwire's complementary 2.5 GHz spectrum assets*"⁴⁰ And, in a recent amendment to their pending application to the Commission for transfer of control of Sprint and Clearwire to Softbank, the applicants stated:

With the enhanced capital position, expertise and best practices provided by SoftBank, Sprint will be able to use Clearwire's 2.5 GHz spectrum more effectively as a result of the Clearwire Transaction. Indeed the value and utility of Clearwire's 2.5 GHz spectrum for competitive wireless broadband services is best achieved by combining it with Sprint's complementary core coverage at 1.9 GHz and enhanced geographic coverage with 800 MHz spectrum holdings. Post-transaction, Sprint will be in a position to offer a more robust, higher-capacity mobile broadband network that can compete more effectively in the market place, particularly with the broadband services provided by AT&T and Verizon. Consumers will benefit from the resulting increase in competition and innovation.⁴¹

Sprint's and SoftBank's stated public interest justification for their pending transaction removes any doubt that EBS and remaining BRS spectrum should finally be added to the spectrum screen.

⁴⁰ News Release, Sprint Nextel, *Sprint to Acquire 100 Percent Ownership of Clearwire for \$2.97 per Share* (Dec. 17, 2012) (emphasis added), http://newsroom.sprint.com/article_display.cfm?article_id=2477; see also *id.* (quoting Sprint CEO Dan Hesse as saying that "[t]oday's transaction marks yet another significant step in Sprint's improved competitive position and Sprint is uniquely positioned to maximize the value of Clearwire's spectrum and efficiently deploy it to increase Sprint's network capacity").

⁴¹ Applications of Sprint Nextel Corporation, Transferor, and Softbank Corp. and Starburst II, Inc., Transferees, for Consent to Transfer of Control of Licenses and Authorizations, Amendment, IB Docket No. 12-343, at 6 (filed Dec. 20, 2012).

In sum, the EBS and remaining BRS spectrum should be added to the bands currently included in the screen along with spectrum in the MSS bands, increasing the amount included by 192 MHz.

IV. THERE IS NO BASIS TO REVERT TO A SPECTRUM CAP.

Although a few commenters argue that the Commission should re-impose spectrum caps – including a bright-line limit on overall spectrum holdings,⁴² a cap on spectrum below 1 GHz,⁴³ or a hybrid approach that caps only auctioned spectrum⁴⁴ – there is broad opposition to re-imposing inflexible limits,⁴⁵ and for good reason. Clearwire explains that “[w]hile a hard cap might provide certainty, its inflexibility might restrain the Commission from taking into account unforeseen technological or competitive developments that cause[] a transaction to tip the scales in favor of the public interest.”⁴⁶ Even U.S. Cellular, which several years ago favored re-imposing spectrum aggregation limits,⁴⁷ states that it is “now skeptical concerning ‘spectrum cap’ type limitations on spectrum acquired in the secondary market” and agrees that “the

⁴² See Free Press Comments at 14-15; NTCH Comments at 1-4; RTG Comments at 3-5, 9-10.

⁴³ See Free Press Comments at 17-18; RTG Comments at 3, 8-10; Sprint Nextel Comments at 10-11.

⁴⁴ See T-Mobile Comments at 9-10; U.S. Cellular Comments at 6-9.

⁴⁵ See, e.g., AT&T Comments at 12-13, 24-31; Clearwire Comments at 4-5; CLIP Comments at 10-11; CTIA Comments at 8-9; MetroPCS Comments at 7-8; Tech Freedom Comments at 5-6; TIA Comments at 1-2, 5; Verizon Wireless Comments at 13-17; see also U.S. Cellular Comments at 3-4, 6 (opposing spectrum cap limitations on spectrum acquired in the secondary market).

⁴⁶ Clearwire Comments at 4-5.

⁴⁷ See Comments of United States Cellular Corporation, *Petition for Rulemaking To Impose A Spectrum Aggregation Limit on All Commercial Terrestrial Wireless Spectrum Below 2.3 GHz*, RM-11498 (Dec. 2, 2008).

circumstances involved in such acquisitions can be various and complex and that the public interest is probably best served by a careful, case by case analysis of such transactions.”⁴⁸

As the Commission recently noted, “[s]pectrum is an essential input in the provision of mobile wireless services, and ensuring that sufficient spectrum is available for incumbent licensees as well as potential entrants is critical to promoting effective competition and innovation in the marketplace.”⁴⁹ A spectrum cap ignores this reality and thus, as Dr. Shampine has explained, is contrary to the public interest. First, “caps can raise providers’ costs and diminish the quality of their services by decreasing innovation, increasing prices, and delaying introduction of new services and technologies.”⁵⁰ Second, a cap harms consumer welfare by inhibiting the new and innovative services providers can offer their customers. To maintain growth of existing services and simultaneously offer the next-generation services consumers demand, a mobile wireless provider needs access to increasing amounts of spectrum.⁵¹ Without access to spectrum, providers’ customers and consumers as a whole will be harmed. Third, the objective of the cap – protecting CMRS competition – can be fully achieved through less intrusive means, including application of the spectrum screen (and, in the case of transactions, separate review by the Department of Justice).⁵² Ultimately, a cap is simply too rigid and “inherently inflexible” to be applied to the dynamic wireless market.⁵³

⁴⁸ U.S. Cellular Comments at 6.

⁴⁹ *AT&T WCS MO&O*, ¶ 20.

⁵⁰ Shampine Initial Decl. ¶ 28.

⁵¹ *See id.* ¶ 31 (“[A] spectrum cap would not only constrain the output of those carriers that have been most successful in attracting customers and offering new services, but would constrain many of the very firms that have most aggressively invested in spectrum conservation.”).

⁵² *See Reply Declaration of Allan L. Shampine, Ph.D.*, ¶ 19 (Jan. 3, 2013) (attached as Exhibit 1) (“Shampine Reply Decl.”) (“The goal of a spectrum aggregation policy with respect to competition is to ensure that aggregation does not reach a level at which competitors are unable

The few commenters that support returning to a spectrum cap demonstrate, as Dr. Shampine notes, “a fundamental misunderstanding of the goals of competition policy and of how free markets efficiently allocate resources.”⁵⁴ As an initial matter, these commenters turn the principle of “regulatory certainty” on its head by creating a hard line regarding which transactions will not be allowed to proceed rather than which transactions will be allowed to proceed. Investment and innovation are served by providing clear guidance on which transactions are permissible and a case-by-case analysis that determines which transactions are impermissible. Further, these commenters confuse protecting competition with protecting particular competitors. “Allowing some firms to acquire spectrum at lower prices by excluding other firms from the market is not a ‘benefit,’ but a demonstration that the spectrum is not being used efficiently.”⁵⁵

Finally, there is no basis to establish a rebuttable presumption that transactions exceeding the screen are contrary to the public interest.⁵⁶ As Dr. Shampine observed, “a strong presumption against approval would operate in similar fashion to a hard cap and would share the same problems.”⁵⁷ Indeed, the Commission has held that the existing screen set at a one-third threshold is already conservative,⁵⁸ and in many cases above-screen transactions are likely to be

to expand output enough to provide a competitive constraint on other carriers. That can be achieved with some firms holding less than one third of the available spectrum.”).

⁵³ See Shampine Initial Decl. ¶ 29.

⁵⁴ Shampine Reply Decl. ¶ 15.

⁵⁵ *Id.* ¶ 18.

⁵⁶ See CCA Comments at 16-17; MetroPCS Comments at 11.

⁵⁷ Shampine Initial Decl. ¶ 11.

⁵⁸ See *AT&T Wireless Services, Inc. and Cingular Wireless Corporation*, Memorandum Opinion and Order, 19 FCC Rcd 21522 at 21569 ¶ 109 (2004) (“[I]n line with the conservative approach embodied in this initial screen, the function of which was simply to eliminate from further consideration any market in which there is no potential for competitive harm as a result of this

pro-competitive.⁵⁹ As the Commission recently observed, its competitive analysis in above-screen markets should focus on “evaluat[ing] various characteristics of these markets that would allow rival service providers to provide an effective competitive constraint” within each market.⁶⁰ This rulemaking should affirm the factors the Commission will apply: the number of operating service providers, the extent of their geographic coverage, and the spectrum they hold; the number of licensees that hold spectrum and could enter the market or make their spectrum available on the secondary market; the degree to which the screen would be exceeded; and the consumer welfare benefits of approving the transaction, including the use of additional spectrum to meet customers’ demand or deploy more advanced technologies.⁶¹

One commenter proposes a different new regulation, imposing a “Spectrum HHI” limit.⁶² It provides no factual basis, however, for why this additional restriction is necessary. Moreover, Dr. Shampine concludes that this limit “lacks economic foundation.”⁶³ The Herfindahl-Hirschman Index (“HHI”) is one of many summary statistics used to measure concentration. As Dr. Shampine explains:

In an antitrust context, using the HHI as a screening device with respect to concentration of output (*i.e.*, market share) has some economic foundation because, under certain models of oligopoly, market power can be shown to

transaction, we subjected to further review any market in which one entity controls more than one-third of this critical input.”).

⁵⁹ See AT&T Comments at 22 n.54 (citing cases); Verizon Wireless Comments at 12-13.

⁶⁰ AT&T WCS MO&O ¶ 34.

⁶¹ See Verizon Wireless Comments at 11-13. See also AT&T WCS MO&O ¶ 34 (describing its above-screen market analysis as an assessment of competitive factors, including, but not limited to, “population density, the total number of rival service providers, rival firms’ market shares, population and land area coverage, and availability of spectrum within the market for incumbent service providers as well as for potential entrants to provide mobile telephony/broadband services”).

⁶² See Free Press Comments at 15-16.

⁶³ Shampine Reply Decl. ¶ 14.

increase with the HHI. In the Horizontal Merger Guidelines, the Department of Justice and Federal Trade Commission chose guideline levels for the HHI, measured using industry output, based on their experience. However, those levels, and the underlying economic theory, are based on concentration of output. The analysis does not translate to inputs. That is, there is no economic theory linking concentration in the input market, as measured by the HHI, with prices or competitive outcomes in the output market, in large part because there is only a loose relationship between the input and the output. In particular, firms can increase output without increasing holdings of the spectrum input.⁶⁴

The Commission has recognized the distinction between input and output markets.⁶⁵ This distinction is particularly true when the government itself controls supply of the input at issue. Here, where the government controls the amount of available spectrum, it would be especially unjustified for the government to forbid a provider from acquiring more spectrum because of an increase in spectrum HHI that results simply because the government failed to make more spectrum available. There is in short no valid basis to consider imposing an additional “Spectrum HHI” limit.

V. THE COMMISSION SHOULD NOT ADOPT A BELOW 1 GHz LIMIT, SPECTRUM WEIGHTING, OR AUCTION-SPECIFIC LIMITS

Calls to adopt a separate screen or cap focusing only on spectrum below 1 GHz, to engage in arbitrary spectrum weighting, or to impose auction-specific limits are nothing more than attempts to steer the Commission’s review of spectrum holdings to an ends-driven result

⁶⁴ *Id.*

⁶⁵ See, e.g., *2000 Biennial Regulatory Review; Spectrum Aggregation Limits for Commercial Mobile Radio Services*, Report and Order, 16 FCC Rcd 22668 at 22680 ¶ 27 (2001) (“*2001 Order*”), (“Again, we emphasize that the markets with which we are principally concerned are the output markets for services, and that conditions in the input markets provide only a partial proxy measure of competition in the output markets.”).

that will benefit specific competitors – not competition or the public interest.⁶⁶ The Commission should reject such efforts.

A. The Commission Should Not Adopt a Separate Spectrum Limit for Spectrum Holdings Below 1 GHz.

The record shows that spectrum in different bands and even sometimes in various blocks within a band has varying advantages and disadvantages, and the Commission should reject calls to create a separate screen⁶⁷ or cap⁶⁸ for spectrum below 1 GHz. Parties that advocate for this new regulatory tool fail to show why the current screen is not sufficient or why another screen is needed. Moreover, a separate approach for spectrum below 1 GHz presumes that its propagation characteristics and coverage capabilities render it “uniquely valuable”⁶⁹ over and above all other spectrum – but this cannot be squared with the reality that spectrum above 1 GHz has distinct advantages, including device design benefits as well as capacity advantages that are particularly important given rising demand for more spectrum capacity.⁷⁰ The Commission has itself

⁶⁶ See *SBC Commc'ns. v. FCC*, 56 F.3d 1484, 1491 (D.C. Cir. 1995) (“The Commission is not at liberty, however, to subordinate the public interest to the interest of ‘equalizing competition among competitors.’”) (quoting *Hawaiian Telephone Co. v. FCC*, 498 F.2d 771, 776 (D.C. Cir. 1974)); *Bell Atlantic Mobile Systems and NYNEX Mobile Communications Co.*, Memorandum Opinion and Order, 12 FCC Rcd 22280 at 22288, ¶ 16 (1997) (“Our statutory duty is to protect efficient competition, not competitors.”).

⁶⁷ See T-Mobile Comments at 16-18; see also CCIA Comments at 10-17; CCA Comments at 11-12.

⁶⁸ See Sprint Nextel Comments at 9-11.

⁶⁹ See CCA Comments at 11; T-Mobile Comments at 14-15.

⁷⁰ See *Policies Regarding Mobile Spectrum Holdings*, Notice of Proposed Rulemaking, 27 FCC Rcd 11710, ¶ 13 (2012) (“Notice”) (recognizing the need for wireless providers to “increase network capacity to satisfy increasing demand”); FCC, MOBILE BROADBAND: THE BENEFITS OF ADDITIONAL SPECTRUM, OBI TECHNICAL PAPER NO. 6, 13 (Oct. 2010) (“[W]e assume all future cell site growth will emphasize capacity over coverage, which is also conservative from the standpoint of estimating spectrum needs since new coverage sites do not address capacity constraints.”); FCC Office of Intergovernmental Affairs, Webinar: The National Broadband Plan 7 (May 25, 2010) (noting that there is “[i]nsufficient capacity for broadband”).

recognized that “higher frequency spectrum can be ideally suited for providing high capacity where it is needed, such as in high-traffic urban areas.”⁷¹

As William H. Stone, Executive Director of Network Strategy for Verizon, observes in the attached declaration, “[t]here is no technical basis for the claim that below 1 GHz spectrum enjoys advantages that could justify regulating below 1 GHz spectrum for mobile use differently. Every spectrum band that is suitable for mobile networks has both advantages and disadvantages, which depend on multiple factors, including the type of network the provider wants to deploy, the geographic areas it wants to cover, the network speeds it seeks to achieve, and the devices it offers to customers. . . . In determining what spectrum to use in a network, every provider must balance these and other factors to determine the best match of spectrum inputs for achieving its business plan.”⁷² A recent analyst report supports Mr. Stone’s statement, concluding that a band above 1 GHz – the 2 GHz (AWS-4) spectrum DISH plans to use to deploy a nationwide LTE network – may be “the best spectrum ... for deploying LTE due to the right balance of low interference levels and efficient propagation characteristics.”⁷³ The report also highlights another higher band, the 2.5 GHz band used for BRS and EBS, observing that “the utility of higher frequency EBS/BRS bands will improve as networks densify and the bands’ limited propagation becomes less of an issue.”⁷⁴

⁷¹ *Fifteenth Report*, 26 FCC Rcd at 9836-37 ¶ 296.

⁷² Declaration of William H. Stone, Executive Director of Network Strategy, Verizon, ¶¶ 3-4 (Jan. 4, 2013) (attached as Exhibit 2) (“Stone Reply Decl.”).

⁷³ Deutsche Bank, *An Expert’s View on Key Spectrum Issues*, US Telecom Services at 1 (Dec. 3, 2012).

⁷⁴ *Id.*

As Mr. Stone explains, “[s]ignal propagation is only one of many considerations providers take into account in valuing different spectrum bands.”⁷⁵ Indeed, there are numerous countervailing costs and benefits of different spectrum frequencies. Those costs and benefits heavily depend on company-specific variables such as the services the company decides to deploy, the geographic area it wants to serve, the devices it offers, and the other spectrum bands it holds. As explained more fully below, “propagation characteristics can and do lead providers to rely on high-band spectrum depending on the areas they want to serve and the projected traffic levels in those areas.”⁷⁶

First, higher band spectrum offers significant capacity advantages over lower band spectrum that can offset the propagation advantages of lower band spectrum. As Mr. Stone explains, in rural areas, where a wireless network is not capacity limited, lower band spectrum systems will require less infrastructure due to greater propagation characteristics, but these benefits “are sustainable only in rural areas with low traffic density, decline as traffic levels grow, and disappear entirely in the most congested areas.”⁷⁷ He observes, “the overall system capacity in a multi-cell deployment is a function of reuse of the frequency within the coverage areas. Because of their propagation properties, high frequencies are more amenable for dense deployment, which leads to higher overall system-wide capacity per covered geographical area.”⁷⁸

⁷⁵ Stone Reply Decl. ¶ 6.

⁷⁶ *Id.*

⁷⁷ *Id.* ¶ 8.

⁷⁸ *Id.* ¶ 9.

Second, higher band spectrum is often available in larger blocks of contiguous spectrum that allow carriers to provide capacity more efficiently and at a lower cost.⁷⁹ In contrast, the cellular 850 band and the upper 700 MHz C block offer less opportunity to acquire similarly wide contiguous holdings. As the Commission has previously recognized, larger blocks “can enable operators to deploy wider channels and simplify device design.”⁸⁰ Mr. Stone explains that this capacity efficiency gain is due to savings in the overhead channels, data “trunking” efficiencies, and more efficient utilization of hardware at the cell site.⁸¹

Third, as the Commission has observed, some radio systems “may perform better at higher frequencies.”⁸² For example, small cell deployments and advanced antenna systems, including diversity antennas, smart antennas, and multiple-input, multiple-output (MIMO) technology, perform better at higher frequencies.⁸³ The limited signal propagation at higher frequencies facilitates “dense deployment with a reduced risk of harmful interference to geographically or spectrally adjacent users, greatly increasing frequency reuse and available network capacity.”⁸⁴ Indeed, the Commission itself recently acknowledged the advantages of higher frequency spectrum to small cell deployments.⁸⁵ Higher band spectrum similarly has

⁷⁹ *See id.* ¶ 16.

⁸⁰ *Fifteenth Report*, 26 FCC Rcd at 9836-37 ¶ 296.

⁸¹ Stone Reply Decl. ¶ 16.

⁸² *Fifteenth Report*, 26 FCC Rcd at 9836 ¶ 296.

⁸³ *See* Stone Reply Decl. at ¶ 11-12; CHARLES JACKSON, THE SUPPLY OF SPECTRUM FOR CMRS 8-9 (Aug. 19, 2008) (emphasis added), *appended as* Att. 4 to Joint Opposition to Petitions to Deny and Comments of Cellco Partnership d/b/a Verizon Wireless and Atlantis Holdings Inc., WT Docket No. 08-95 (filed Aug. 19, 2008).

⁸⁴ Stone Reply Decl. ¶ 11.

⁸⁵ *Amendment of the Commission’s Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Notice of Proposed Rulemaking and Order, FCC 12-148, ¶ 20 (Dec. 12, 2012) (“limited signal propagation can facilitate dense deployment of small cells with a reduced risk of

distinct advantages when used in dense cellular deployments where spectrum is needed the most.⁸⁶

Fourth, commenters predicate their focus on below 1 GHz spectrum on low-cost coverage assumptions that are not necessarily true. Network deployment needs must take into account quality of service issues, including capacity and throughput; depending on the circumstances, however, capacity needs could obviate propagation-related cost advantages. “As population densities (and thus capacity demands per square mile) increase, cell density must be increased by adding cell sites, ultimately leading to similar cell density for both high-band and low-band spectrum networks.”⁸⁷ Moreover, if an operator uses a mix of low band and high band spectrum, the need to maintain contiguous coverage of multiple carrier frequencies across a given area could eliminate the lower-frequency propagation advantage. Finally, zoning restrictions, interference considerations, and other constraints on base station placement may limit the coverage performance that is achievable in a lower frequency network.

Fifth, commenters asserting the unique, highly valuable nature of below 1 GHz spectrum ignore the complications a carrier confronts in seeking to deploy lower band spectrum so that it matches the capacity of a higher band network. “In theory, a wireless provider can obtain the same capacity from low-band spectrum by deploying more towers in the area and operating at a lower power. However, our experience has shown that deploying more closely spaced towers can cause interference that must be controlled with careful network configuration optimization by modifying such parameters as power levels, antenna height, antenna patterns, antenna

harmful interference to geographically or spectrally adjacent users, greatly increasing frequency reuse and available network capacity”).

⁸⁶ See Stone Reply Decl. ¶ 9.

⁸⁷ *Id.* ¶ 8.

downtilts, and handoff parameters.”⁸⁸ As a result, while the fixed costs of setting up a high frequency network may be higher, the incremental costs are significantly lower because less infrastructure and engineering are needed.

Sixth, advocates of differential regulation of below 1 GHz spectrum do not address the salient advantages of higher band spectrum in device design and cost. As Mr. Stone explains, “Due to the longer wavelengths and other characteristics of low-band spectrum, it is more complicated to incorporate low-band spectrum into mobile devices.”⁸⁹ He explains that “[l]ow-band RF components (e.g., filters, duplexers, antennas) . . . consume more space in the device than high-band RF components.”⁹⁰ Carriers, therefore, are limited in the number of below 1 GHz bands they can deploy in mobile devices and thus in their networks, making higher band spectrum even more valuable. Further, “[t]he maximum device filter and duplexer bandwidths are directly proportional to the center frequency of the transmit band. . . . As such, devices must include a larger number of low-band duplexers than high-band duplexers to cover the same amount of spectrum.”⁹¹ Thus, “the combination of larger components and more components as well as typical design objectives to keep devices small makes it more challenging to add low-band spectrum to mobile devices than high-band spectrum.”⁹²

Seventh, while an assumed advantage of low band spectrum is in-building penetration, this assumption is not always correct. Although it is true that theoretical penetration loss is typically less in lower band spectrum, indoor coverage is often obtained through building

⁸⁸ *Id.* ¶ 10.

⁸⁹ *Id.* ¶ 17.

⁹⁰ *Id.*

⁹¹ *Id.* ¶ 18.

⁹² *Id.*

apertures.⁹³ Higher frequencies generally provide better penetration in these situations due to shorter wavelength. Thus, in many instances, higher frequency spectrum may provide as good or better indoor coverage. Further, as AT&T has previously noted, higher band spectrum may work better with in-building antenna systems.⁹⁴

Eighth, spectrum value is also affected by licensing rules, which have nothing to do with whether the spectrum is above or below 1 GHz. For example, geographic-based licensing vs. site-based licensing or license area size can have a significant impact on the value of spectrum to a particular carrier.⁹⁵ Similarly, the licensing and service rules governing spectrum that is adjacent to a particular spectrum band can significantly affect the value of spectrum. Indeed, the risk of interference, which can occur in both lower band and higher band spectrum, is one of the critical considerations a carrier makes in determining what spectrum to use for a particular deployment.⁹⁶ These licensing factors often carry more weight in planning a network than the physical characteristics of a particular spectrum band.

The comments and actions in the market of two of the primary proponents of a below 1 GHz-specific review – T-Mobile and Sprint – underscore that the relative attributes of spectrum above and below 1 GHz spectrum do not warrant a separate spectrum holdings analysis. In its initial comments, Sprint touts the benefits of higher band spectrum: “The shorter propagation range of 2.5 GHz spectrum, for example, is well-suited to maximizing cellular reuse and thereby

⁹³ See *id.* ¶ 13.

⁹⁴ See JEFFREY REED AND NISHITH TRIPATHY, COMPARATIVE ANALYSIS OF SUITABILITY OF LOWER AND HIGHER FREQUENCY BANDS FOR CELLULAR NETWORK DEPLOYMENTS 30-31, 36 (Mar. 17, 2011) (“REED/TRIPATHI COMPARATIVE ANALYSIS”), *appended to* Joint Opposition of AT&T Mobility Spectrum LLC and Qualcomm Incorporated, WT Docket No 11-18 (Mar. 21, 2011).

⁹⁵ See Stone Reply Decl. ¶ 14.

⁹⁶ See *id.* ¶ 15.

increasing subscriber capacity while maintaining broadband speeds in densely-populated markets” – exactly what current marketplace dynamics demand.⁹⁷ Sprint has acknowledged elsewhere that “having more spectrum available is a far greater advantage than the frequency band it occupies.”⁹⁸ Likewise, T-Mobile has explained that higher band spectrum can be “as effective as, or preferred to, lower band spectrum in providing competitive services, particularly for enhancing capacity in highly populated areas.”⁹⁹ Indeed, given that wireless networks face congestion in highly populated areas, rather than in rural areas where there is no shortage of spectrum, one might argue that higher band spectrum is more valuable.

Further, the marketplace shows that low band spectrum is not needed to deploy a national or large regional network. As Mr. Shampine notes, “[w]hile there are technical differences between different bands of spectrum, the relevant question with respect to setting the spectrum screen is not whether such differences exist, but whether they are relevant to the purpose of the screen. . . . [While c]ommenters advocating for weights claim that the composition of that spectrum is critical to the analysis – that if the remaining firms had no access, for example, to sub-1 GHz spectrum then they would not be able to expand output and operate as competitive constraints[, t]his claim is demonstrably incorrect.”¹⁰⁰ Providers have successfully deployed national and large regional networks using only higher frequency spectrum.¹⁰¹

⁹⁷ Sprint Nextel Comments at 9.

⁹⁸ Sprint Nextel, “Mobile WiMAX: The 4G Revolution Has Begun,” Version 1.0 at 12, www.wimax.com/whitepapers/sprint-mobile-wimax.pdf (last visited Jan. 7, 2013).

⁹⁹ Letter from Russell H. Fox, Counsel for T-Mobile, to Marlene H. Dortch, FCC, WT Docket No. 10-133 *et al.*, at 2 (filed Dec. 2, 2010).

¹⁰⁰ Shampine Reply Decl. ¶¶ 4-5.

¹⁰¹ See AT&T Comments at 64-65 (referencing the deployments of T-Mobile, Leap, and MetroPCS in the AWS and PCS bands; Sprint Nextel’s deployment in the PCS band; and Clearwire’s deployment in the BRS/EBS bands).

Two of the national carriers, T-Mobile and Sprint, declined even to participate in the 700 MHz Auction 73 or any of the other three smaller auctions of below 1 GHz spectrum, and since that time they have repeatedly refrained from secondary market opportunities to acquire below 1 GHz spectrum. To the contrary, they have made multi-billion dollar investments in companies that principally hold above 1 GHz spectrum – MetroPCS and Clearwire. Their strategy to rely exclusively on above 1 GHz spectrum to compete underscores why “a firm with spectrum deemed suitable by the Commission for mobile service can be a competitive constraint regardless of the precise composition of that spectrum,”¹⁰² and why the Commission should not engage in regulatory distinctions based on the frequency of the spectrum being acquired.

In sum, there is no basis to find that lower band spectrum offers advantages over and above other spectrum that warrant different treatment as part of the Commission’s spectrum holdings analysis. Given the capacity, device design, and other benefits of higher band spectrum, there is no basis to apply a secondary screen focused only on below 1 GHz spectrum. Indeed, were the FCC to consider a spectrum screen for spectrum below 1 GHz based on the propagation/cost benefits of lower band spectrum, it would also need to consider a screen for spectrum *above* 1 GHz based on capacity, block size, efficiency, device design, and other benefits. Such an approach would render the entire screen framework inherently unworkable, contrary to the goals of this proceeding.

¹⁰² Shampine Reply Decl. ¶ 5.

B. The Commission Should Not Weight Bands Based on Frequency or Value.

Proposals to “weight” spectrum included in the screen on the basis of frequency/technical characteristics (*e.g.*, below 1 GHz or lower frequency spectrum)¹⁰³ or value (*e.g.*, auction or secondary market prices or book value)¹⁰⁴ are similarly unsound and inherently unworkable.¹⁰⁵

The record demonstrates that a frequency-based weighting scheme would be both arbitrary and impractical.¹⁰⁶ First, for the reasons discussed above, there is no basis to conclude that lower band spectrum is of greater value than higher band spectrum. Each has relative advantages which vary depending on carrier needs and the state of the marketplace. A weighting scheme, moreover, would require determining a relative value for each spectrum band depending on a number of factors, including the physical environment in a given area, population density, services demanded by consumers, services provided by the carrier, and the nature of the carrier’s other spectrum holdings.¹⁰⁷ There is simply no reasonable metric to weigh relative values in any objective, non-arbitrary way. In any event, market pricing for spectrum already accounts for any theoretical differences in frequency bands, because, for example, higher band spectrum will garner lower prices in any area where deployment costs for lower band spectrum are lower and the higher band spectrum has no offsetting advantages.¹⁰⁸

¹⁰³ See CCA Comments at 10-11 n.33; Public Knowledge Comments at 5, 11-12; Writers Guild Comments at 9.

¹⁰⁴ See CCA Comments at 10-11 n.33; Public Knowledge Comments at 12-14; Sprint Nextel Comments at 12.

¹⁰⁵ See, *e.g.*, AT&T Comments at 62-69; Mobile Future Comments at 12-14; Verizon Wireless Comments at 29-31, 34-37.

¹⁰⁶ See, *e.g.*, Mobile Future Comments at 14; Verizon Wireless Comments at 28.

¹⁰⁷ See Shampine Initial Decl. ¶ 15; *see also* CLIP Comments at 13-14.

¹⁰⁸ See, *e.g.*, AT&T Comments at 66-67; CLIP Comments at 13; *see also* Seth L. Cooper, “Stifling the Spectrum Market: The Negative Implications of the AT&T-Qualcomm Order,” at 3-4, http://www.freestatefoundation.org/images/Stifling_the_Spectrum_Market_-

Further, the Commission is correct that a value-based spectrum screen – whether based on pricing or book value – would be problematic,¹⁰⁹ which should quickly lead to its rejection. For example, Sprint Nextel offered a value-based weighting scheme without any explanation – again underscoring that weighting is an ends-driven, unsupportable endeavor.¹¹⁰ The analyst report that is the underlying source of this weighting scheme recognized that “spectrum valuation is more art than science with valuation swinging widely due to supply and demand and not around a stable, precise value.”¹¹¹

Similarly, comments submitted on behalf of Public Knowledge recognize serious flaws with auction-based pricing valuations: “[b]asing valuations only on auction bids, which at best are a snapshot of value from a previous era, could ... introduce significant distortions.”¹¹² The comments also describe use of secondary market pricing as problematic, noting that “trades and leases are relatively infrequent and the financial details are sufficiently opaque that this also may produce an incomplete and perhaps distorted picture.”¹¹³ Finally, book-value-based schemes are also unreliable, because they are “subject to differences in the financial accounting judgments of

The_Negative_Implications_of_the_AT_T-Qualcomm_Order_013012.pdf (Jan. 31, 2012) (“[A]ny cost savings to carriers arising from the unique characteristics of low-band spectrum would be factored in to the market price for the spectrum licenses.... The sorting out of near-term versus long-term deployment efficiencies should be left to the price system. For spectrum licenses exchanged through auctions this means winning bid amounts. And for secondary market transactions, this means bargained for sale amounts.”).

¹⁰⁹ See Notice, 27 FCC Rcd at 11727-29 ¶¶ 37-39 (noting that license values vary with geographic location, the population density of a market, the location of a particular block of spectrum within its spectrum band, the technologies adopted by licensees, and other factors that constantly change).

¹¹⁰ Sprint Nextel Comments at 12; see also CCIA Comments at 16.

¹¹¹ J.P. Morgan, *Spectrum Valuation Overview – Carrier by Carrier Base-Case Spectrum Value Across Wireless Industry*, Telecom Services and Towers, North American Equity Research (Nov. 30, 2011).

¹¹² Public Knowledge Comments at 12-13.

¹¹³ *Id.* at 13.

various license holders.”¹¹⁴ Ultimately, value is simply too variable – based on time, market conditions, and numerous other factors – to provide a remotely reliable or predictable tool for setting a spectrum screen.¹¹⁵

Even weighting proponents recognize the complexity of assigning each spectrum band a relative value, acknowledging that “[f]urther work is needed to find a weighting function that represents the best balance” of factors.¹¹⁶ This complexity alone is reason to reject a frequency-based weighting scheme. As Dr. Shampine explains, “[u]sing weights in the spectrum screen would complicate the analysis, undermining efforts to encourage efficient operation in the market, and would not offset those costs with any meaningful contribution to the competitive analysis.”¹¹⁷ Any such effort would “mov[e] it away from a screening device and back towards a pure case-by-case analysis . . . mak[ing] the screen highly situation specific and thus not useful as a clear policy,”¹¹⁸ contrary to the goal of this proceeding to “provide rules of the road that are clear and predictable.”¹¹⁹

C. The Commission Should Reject Auction-Specific Spectrum Limits.

The Commission should reject calls to impose auction-specific limits that would restrict the amount of spectrum a carrier can acquire at auction by band, geography, or in total.¹²⁰ There has been no showing of market failure that would justify replacing the current application of the spectrum screen to auction results with *ex ante* rules that limit providers’ ability to participate in

¹¹⁴ Katz-Israel Decl. ¶ 93.

¹¹⁵ See AT&T Comments at 67-69.

¹¹⁶ Public Knowledge Comments at 11.

¹¹⁷ Shampine Reply Decl. ¶ 3.

¹¹⁸ Shampine Initial Decl. ¶ 15.

¹¹⁹ See Notice, 27 FCC Rcd at 13477 ¶ 1.

¹²⁰ See Sprint Nextel Comments at 2-3, 9-11; T-Mobile Comments at 1-2, 7-10; U.S. Cellular Comments at 6-8.

auctions.¹²¹ Proposals to impose such limits are transparent efforts to manipulate the auction process to enable certain bidders to buy the spectrum at a lower price, to the detriment of consumers, the Commission’s auction goals, and taxpayers.

First, as the Commission has recognized, any restriction on participation in an auction jeopardizes the goals of the auction because it will “risk reducing the likelihood that the party valuing the license the most will win the license and put it to use for the benefit of the public.”¹²² Alternatively, it could result in the spectrum being held by an entity that is not capable of utilizing it and deploying service in the most efficient manner. Such artificial restrictions on bidders could result in significant losses for the public and the Commission’s auction goals to rapidly deploy mobile broadband services.¹²³ Thus, spectrum limits that have the effect of precluding or restricting users from participating in auctions will result in the inefficient allocation of spectrum.¹²⁴

Second, the Commission itself has recognized that restrictions on spectrum ownership bans are appropriate only to prevent a substantial competitive harm to specific markets.¹²⁵ As discussed above, there has been no such showing. In this competitive market, any interested mobile provider should have the option of bidding on the future spectrum made available at auction.

¹²¹ See AT&T Comments at 33, 59; Katz-Israel Decl. ¶ 67; IIA Comments at 3.

¹²² *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd 15289 at 15385 ¶ 259 (2007) (“700 MHz Second Report and Order”).

¹²³ See *Service Rules for the 746-764 and 776-798 MHz Bands*, First Report and Order, 15 FCC Rcd 476 at 489 ¶ 31 (2000) (noting that it is preferable for “the marketplace forces operating through the auction process, rather than regulatory fiat, [to] determine which of the multitude of service proposals will actually be implemented”).

¹²⁴ See AT&T Comments at 33.

¹²⁵ See *700 MHz Second Report and Order*, 22 FCC Rcd at 15383 ¶ 256.

Third, spectrum limits that depress participation in the upcoming incentive auction could have profound adverse effects. Diminished participation in the incentive auction would place funding at risk. Moreover, it would lessen the funds ultimately available for deficit reduction. Accordingly, the Commission “should not ... impair any carriers from participating in the upcoming Incentive Auctions or future auction of new spectrum.”¹²⁶

Finally, to the extent the Commission chooses to modify its existing spectrum screen policy by adopting any form of a spectrum cap – which it should not do – the Commission may not use such policy to prohibit an applicant from fully participating in an auction. Section 6404 of the Spectrum Act explicitly states that the Commission cannot “prevent a person from participating in a system of competitive bidding,” if such person complies with the Commission’s auction rules and meets the technical, financial, character and citizenship qualifications required to hold the license.¹²⁷ Thus, under the statute, any new rule governing spectrum holdings could only affect a company’s overall spectrum holdings *after* the auction, not its participation in or bidding during the auction.

¹²⁶ IIA Comments at 3.

¹²⁷ See 47 U.S.C. § 309(j)(17).

CONCLUSION

For the reasons stated above and in Verizon Wireless' initial comments, the Commission should reaffirm the use of a single spectrum screen that operates as a safe harbor. The spectrum screen should be corrected to include all spectrum suitable and available for mobile services, including MSS, EBS and remaining BRS spectrum. There is no need for new rules or screens. Specifically, there is no reason to reimpose an inflexible spectrum cap, nor to create a secondary sub-1 GHz spectrum screen or cap, weight different spectrum bands, or impose auction-specific limits. Such additional restrictions are inherently arbitrary, would inject the very uncertainties that the Commission seeks to remove, and are unnecessary. The screen, properly updated and applied as a safe harbor, provides a fully sufficient mechanism for reviewing spectrum acquisitions to protect competition and promote the growth of the wireless sector to meet consumers' needs.

Respectfully submitted,

/s/

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