

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Policies Regarding Mobile Spectrum	)	WT Docket No. 12-269
Holdings	)	
	)	
Expanding the Economic and Innovation	)	Docket No. 12-268
Opportunities of Spectrum Through Incentive	)	
Auctions	)	

**PETITION FOR RECONSIDERATION**

**SPRINT CORPORATION**

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## EXECUTIVE SUMMARY

The Federal Communications Commission's *Report and Order* in its *Mobile Spectrum Holdings Rulemaking Proceeding* fully recognizes the important competitive differences among spectrum bands. The *Report and Order* finds that "not all spectrum is created equal."<sup>1</sup> For example, it recognizes the important operational advantages of low-band spectrum (spectrum below one gigahertz), which is predominantly controlled by the two largest providers, AT&T and Verizon. Moreover, it confirms that the functional differences among bands are relevant to the Commission's public interest analysis of spectrum transactions, and indeed will be a "key factor" in reviewing these transactions.<sup>2</sup> Each of these findings has strong support in the record.

Notwithstanding these findings, however, the Commission declined "at this time" to adopt weightings for its spectrum screen as proposed by Sprint and other parties. Instead, the Commission decided to continue to treat all spectrum as equal in applying the spectrum screen, stating that it will seek to account for the differences among spectrum bands as part of its case-by-case analysis where transactions exceed the screen. This approach fails to provide clear "rules of the road," creates an inaccurate screen, and is inconsistent with the Commission's findings in the *Report and Order*.

Without weightings, the spectrum screen will trigger numerous "false positives" for transactions involving higher band spectrum. This problem is exacerbated by the Commission's decision to count in its screen the vast majority of 2.5 GHz spectrum, despite the many encumbrances that continue to inhibit the full utilization of this spectrum. These false positives

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<sup>1</sup> *Policies Regarding Mobile Spectrum Holdings*, Report and Order, FCC 14-63, WT Docket No. 12-269, ¶ 3 (rel. June 2, 2014) ("*Report and Order*").

<sup>2</sup> *Id.* ¶ 274.

will, at the very least, delay the processing of pro-competitive transactions and create uncertainty about the Commission's review of transactions involving higher band spectrum. Creating delay and uncertainty runs contrary to the Commission's goals of improving transactional certainty, maximizing efficient spectrum use and providing licensees the flexibility they need to improve service to consumers.

Without weightings, the spectrum screen will also result in "false negatives," failing to flag for closer scrutiny certain transactions involving low-band spectrum, which be treated like all other bands. The *Report and Order* states that the Commission will apply an "enhanced factor" to such transactions, but it is unclear how such review will be effective in preventing even greater anti-competitive concentration of spectrum below 1 GHz. The efficacy of this "enhanced factor" is called into further doubt by the fact that, according to the *Report and Order*, it will be guided by the Commission's precedent, and to date this precedent has permitted AT&T and Verizon to control the vast majority of low-band spectrum available for commercial broadband use.

The Commission can avoid these problems and promote its competition goals by adopting spectrum weightings. The record contains substantial empirical support for doing so. These weightings will provide a far more rational, transparent, and accurate spectrum screen, which in turn will help ensure that the Commission's transaction reviews promote the public interest, competition and consumer welfare. Indeed, the Commission launched this proceeding "to ensure that our policies and rules afford all interested parties greater certainty, transparency and predictability to make investment and transactional decisions, while also promoting the competition needed to ensure a vibrant, increasingly mobile economy driven by innovation."<sup>3</sup>

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<sup>3</sup> *Policies Regarding Mobile Spectrum Holdings*, Notice of Proposed Rulemaking, 27 FCC

The spectrum screen adopted in the *Report and Order* falls far short of these objectives by failing to incorporate different spectrum weightings.

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Rcd 11710, ¶ 15 (2012) (“*Notice*”).

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**PETITION FOR RECONSIDERATION**

Sprint Corporation (“Sprint”) hereby petitions the Federal Communications Commission (the “Commission” or “FCC”) to reconsider its decision not to incorporate spectrum weightings into the revised spectrum screen adopted in the *Report and Order* in this proceeding.<sup>1</sup> One of the Commission’s primary objectives in initiating this proceeding is to revise the spectrum screen to provide a more accurate, transparent and predictable tool for identifying transactions that raise potential competitive concerns. Incorporating different spectrum weights into the screen will better achieve this objective than the Commission’s decision, as stated in the *Report and Order*, to rely on a case-by-case assessment of the important competitive differences among frequency bands.

**I. INTRODUCTION**

The Commission has long recognized the critical role spectrum plays in providing mobile wireless services – originally mobile telephony and subsequently combined telephony and broadband – to consumers. In noting the significant nexus between a carrier’s spectrum holdings and its ultimate competitiveness, the Commission has also expressed concern that excessive

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<sup>1</sup> *Report and Order* ¶ 274. See also 47 C.F.R. § 1.429. Sprint is not seeking reconsideration of any other aspect of the *Report and Order*.

concentration of this essential input may potentially lead to anti-competitive effects in downstream markets by foreclosing competition or raising rival carrier costs. To address these concerns, the Commission has over the years adopted various spectrum aggregation policies intended to prevent excessive concentration of spectrum and to promote competition.

During the past ten years, a central component of these policies has been the Commission's spectrum screen. The screen does not "cap" a licensee's spectrum holdings, nor does exceeding the screen create a presumption that a proposed spectrum acquisition is contrary to the public interest. Rather, the screen's role is to identify local markets in which a proposed transaction may potentially raise competition concerns and which therefore warrant closer, case-by-case scrutiny.

In applying the spectrum screen, the Commission has historically treated all mobile telephony/broadband spectrum bands as equal. A megahertz of 700 MHz spectrum, for example, had been assumed to be completely fungible with a megahertz of spectrum in higher-frequency spectrum bands, such as the Advanced Wireless Services ("AWS") band at 1.7/2.1 GHz or the Educational Broadband Service ("EBS") band at 2.5 GHz band. In initiating this proceeding, however, the Commission recognized that it should reexamine counting different spectrum bands equally for competitive analysis purposes. The record developed in this proceeding amply demonstrates that these different spectrum bands have very different signal propagation characteristics, resulting in far-reaching differences in the cost, timeliness, scope, and even the *viability* of broadband deployments.<sup>2</sup> But even more importantly, the record developed herein

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<sup>2</sup> Although the spectrum screen has historically ignored the important differences among bands, this flaw did not significantly undermine the Commission's competition goals during the initial years of its application. The explosive consumer demand for broadband data had yet to arrive, placing fewer demands on wireless networks compared to what would come later. Moreover, until the 700 MHz auction in 2008, no carrier had aggregated an anti-competitive

demonstrates that the Commission’s spectrum screen cannot provide accurate, much less useful, results without accounting for the competitive significance of deploying different spectrum bands in a wireless broadband network.

In soliciting comment for its first comprehensive review of its spectrum holdings policies in ten years, the Commission specifically noted that providers need a mix of spectrum to keep up with the ever-increasing and diverse broadband data demands of consumers and their smartphones. Recognizing the salient cost, utility and functional differences between bands – and in particular the substantial cost and coverage advantages conferred by low-band spectrum (spectrum below one gigahertz) – the Commission sought comment on methodologies to make the screen reflect the varying competitive impact associated with ownership (and concentration) of different spectrum bands.

Building on observations made in a number of recent transaction decisions, the Commission noted that AT&T and Verizon have captured the lion’s share of low-band spectrum and expressed concern that downstream competition could be diminished – and indeed may be unsustainable – unless other mobile operators gain access to such spectrum.<sup>3</sup> Yet the

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share of low-band spectrum. In addition, the Commission did not count EBS and certain Broadband Radio Service (“BRS”) spectrum under its screen because of various regulatory and licensing encumbrances on this spectrum. This policy not only appropriately avoided counting spectrum with such encumbrances; it also indirectly ameliorated the incorrect assumption that 2.5 GHz spectrum should be counted the same as low-band spectrum despite the significant propagation and technical differences between these bands. All of these factors effectively created a greater acceptable margin of error in the spectrum screen’s application, lessening the need for a screen that accounted for spectrum band differences. The *Report and Order*, however, modified the spectrum screen to count the majority of all EBS and BRS spectrum, and none of the other ameliorative factors described above are applicable today.

<sup>3</sup> *Report and Order* ¶¶ 68-69. AT&T and Verizon, as they have for years, urged the Commission to ignore the obvious differences among spectrum bands. The two largest carriers hold approximately 73 percent of low-band spectrum on a population-weighted, nationwide basis, and hold more than 77 percent of such spectrum in the top 100 markets. Their

Commission decided in the *Report and Order* to count under its spectrum screen the vast majority of 2.5 GHz spectrum without weighting (with only a relatively small discount due to a subset of demonstrated licensing encumbrances), despite extensive evidence contained in the record attesting to the unique and significant characteristics distinguishing the band from all other commercial mobile radio service bands. Adding substantial high-band spectrum (and in particular, higher-frequency spectrum with numerous unique encumbrances) exacerbated the screen's central defect – treating all spectrum bands alike – and magnified the importance of implementing some spectrum screen mechanism to reflect the key competitive differences among bands. Despite these significant developments, the Commission declined in the *Report and Order* to adopt frequency-specific weightings to ensure that its spectrum screen is an accurate tool for distinguishing between transactions that raise potential competitive concerns and require a closer look from those that do not.

In other words, the Commission made findings in this proceeding that left it at the doorstep of adopting spectrum weightings as contemplated in its *Notice*, but unfortunately, and somewhat inexplicably, failed to cross that threshold. The *Report and Order* fully recognizes the important technical differences among spectrum bands, emphasizes that these differences play a critical role in the cost and operational flexibility of deploying wireless networks, and concludes that spectrum band differences are directly relevant to its analysis of a proposed transaction's impact on the input market for spectrum and consumer welfare. The Commission nonetheless failed to take the next logical step by adjusting the screen to incorporate spectrum weightings at

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predominant share of low-band spectrum gives them distinct competitive advantages because of the unique propagation and other characteristics of low-band spectrum relative to higher band spectrum. AT&T and Verizon urged the Commission to ignore these factors and to treat all mobile broadband spectrum as fungible under the Commission's spectrum policies.

this time.

Instead, the *Report and Order* states that the Commission will account for spectrum band differences as part of its case-by-case analysis of proposed acquisitions that exceed the spectrum screen in a market. A case-by-case approach, however, provides little guidance to FCC staff and applicants, injecting substantial uncertainty and unnecessary delays into the Commission's transaction review process. It also increases the risk of arbitrary and inconsistent decision-making.

As the largest holder of 2.5 GHz spectrum, Sprint is particularly affected by the spectrum screen decisions in the *Report and Order*. Not only does the *Order* greatly increase the amount of 2.5 GHz spectrum counted under the screen, it continues to treat this high-band spectrum as functionally and competitively equivalent to low-band spectrum. Sprint readily acknowledges that there is no uniquely-perfect system for devising spectrum weightings; it has never suggested otherwise. But the well-developed and extensive record developed herein provides a reasonable basis for establishing weightings that will improve the accuracy, transparency and predictability of the spectrum screen and better promote competition – the Commission's preeminent public interest goal. At the very least, such weightings will greatly improve the current screen, which simply assumes, in direct conflict with the findings in the *Report and Order*, that all spectrum bands are the same in their impact on downstream competition.

## II. THE *REPORT AND ORDER* CORRECTLY RECOGNIZES THE IMPORTANT DIFFERENCES AMONG SPECTRUM BANDS AND THE UNIQUE COMPETITIVE ADVANTAGES OF LOW-BAND SPECTRUM

Reasoned decision making requires a “rational connection between the facts found and the choice made.”<sup>4</sup> In this case, the *Report and Order* expressly found that the “obvious and unavoidable” differences between low and higher band spectrum are “relevant to our mobile spectrum holdings policies.”<sup>5</sup> These differences are reflected in a number of policy decisions adopted in the *Report and Order*. In particular, the Commission established a spectrum reserve in the 600 MHz Television Broadcast Incentive Auction “to ensure against excessive concentration in holdings of low-band spectrum.”<sup>6</sup> The Commission similarly emphasized the differences among low and higher band spectrum in declining to adopt spectrum limits for the AWS-3 auction, distinguishing the characteristics and limited availability of the “‘coverage band’ substitutes” (*i.e.*, the 600 MHz, 700 MHz, and 800 MHz bands) from the characteristics and greater availability of higher spectrum bands.<sup>7</sup>

Sprint and numerous other parties submitted detailed evidence demonstrating the important differences among spectrum bands and the advantages of low-band spectrum in

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<sup>4</sup> *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962).

<sup>5</sup> *Report and Order* ¶ 63. *See also id.* ¶ 19 (“[W]e adopt mobile spectrum holdings policies in this rulemaking that address how the differences among spectrum bands may affect our overall competitive analysis of spectrum acquisitions and therefore our decision making for both auctions and secondary market transactions.”).

<sup>6</sup> *Id.* ¶ 4.

<sup>7</sup> *Id.* ¶¶ 222-23. The Commission explicitly noted that low-band spectrum is “relatively scarce as compared to higher band spectrum.” *See also id.* ¶ 14; *id.* ¶ 46 (“[T]here [is] 134 megahertz of spectrum below 1 GHz suitable and available for the provision of mobile broadband services and 446.5 megahertz of suitable and available spectrum above 1 GHz.”).

deploying and operating wireless systems.<sup>8</sup> Based on this evidence, the Commission found that while high-band spectrum can be useful in enhancing system capacity, “[s]pectrum below 1 GHz has, compared to spectrum above 1 GHz, distinct propagation advantages for network deployment over long distances, while also reaching deep into buildings and urban canyons.”<sup>9</sup> The record shows that these advantages make it much less costly, and provide greater operational flexibility, to deploy a wireless network using low-band spectrum compared to higher band spectrum. As the Commission found, “the data submitted on the record does demonstrate that there are significant differences in deployment costs between low-band and high-band spectrum.”<sup>10</sup> Further, the Commission observed that “the record contains substantial evidence that the disadvantages of high-band spectrum resulting from poor in-building coverage and

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<sup>8</sup> See, e.g., *Differences Between Frequencies Do Not End at 1 GHz: The Screen Must Account for Differences Between Mid- and High-Band Spectrum* attached to Letter from Lawrence Krevor, Sprint Corporation, to Marlene H. Dortch, Secretary, FCC, at ii (May 5, 2014) (“Sprint May 5 Ex Parte”) (The “decay rate of high-band spectrum means it can take up to eighteen times as many cell sites for a high-band operator to provide the same coverage as a low-band operator and 5.5 times as many cell sites to replicate the coverage of a mid-band operator, resulting in similarly greater proportions in terms of a carrier’s operating expenses.”); *The Imperative for a Weighted Spectrum Screen: Low-, Mid-, and High-Band Frequencies Are Not Freely Substitutable Market Inputs* attached to Letter from Lawrence Krevor, Sprint Corporation, to Marlene H. Dortch, Secretary, FCC (dated April 4, 2014; received April 7, 2014) (“Sprint April 4 Ex Parte”); *Sprint’s Competition-Based Framework for A Weighted Wireless Broadband Spectrum Screen* attached to Letter from Lawrence Krevor, Sprint Corporation, to Marlene H. Dortch, Secretary, FCC (Feb. 11, 2014) (“Sprint February 11 Ex Parte”); Declaration of Mark McDiarmid attached to Letter from Trey Hanbury, Counsel to T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, ¶ 33 (April 1, 2014) (The “unique propagation characteristics of low-band spectrum . . . confer advantages in increased flexibility in placing equipment, which can reduce costs, accelerate deployment, and increase coverage.”); *Updating the Spectrum Screen: Comments for Public Knowledge by Jon M. Peha* (Nov. 28, 2012) (“Jon Peha Public Knowledge Comments”). Unless otherwise noted, all filings referenced in this petition were filed in WT Docket No. 12-269.

<sup>9</sup> *Report and Order* ¶ 3. See also *id.* ¶¶ 48-54.

<sup>10</sup> *Id.* ¶ 274.

increased obstacles today to siting of new facilities are more than mere cost disadvantages.”<sup>11</sup>

These factors have significant implications for the competitiveness of a carrier that holds disproportionately higher-frequency spectrum as compared to one with significant low-band holdings. Notably, the Commission found that consumers benefit when wireless providers hold a mix of spectrum bands that includes low-band spectrum. A “service provider holding a mix of low- and high-band spectrum licenses would have greater flexibility and would be better able to optimize its network costs for a given quality level, thus promoting the efficient and intensive use of spectrum.”<sup>12</sup>

Recognizing the important differences among spectrum bands is a vital step toward ensuring the Commission’s spectrum aggregation policies promote competition and innovation. To achieve these goals, the Commission’s policies must give wireless providers flexibility to pursue spectrum transactions that improve their service and benefit consumers, while at the same time avoiding excessive concentration of spectrum rights that would foreclose competition. *An effective analysis of these factors requires far more than counting up the raw total amount of an applicant’s spectrum holdings.* It requires an assessment of the type of spectrum holdings in question, given that the differences among frequency bands fundamentally influence deployment costs, operational flexibility, and ultimately downstream competition. *The Report and Order* therefore takes an important step in finding that not all spectrum is created equal and that differences among frequency bands are relevant to the Commission’s competition policies. The Commission’s robust findings on the superiority of low-band spectrum to other bands, however, are difficult to reconcile with its decision to place all categories of spectrum into the

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<sup>11</sup> *Id.* ¶ 65.

<sup>12</sup> *Id.* ¶ 59.

same undifferentiated pool for purposes of identifying potentially anticompetitive concentrations of spectrum resources.<sup>13</sup>

### **III. THE COMMISSION SHOULD HAVE TAKEN THE NEXT LOGICAL STEP AND INCORPORATED FREQUENCY-SPECIFIC WEIGHTINGS INTO ITS SPECTRUM SCREEN**

The Commission’s decision to treat the significant differences among bands as a “key factor” in reviewing potential spectrum transactions reflects its understanding that spectrum bands are not equivalent in their impact on downstream competition. Sprint respectfully submits that this “key factor” also should be incorporated into the screen through the application of different weightings to categories of different frequency bands. Adopting logical variations in weights based on objective technical facts would provide a far more rational, transparent and predictable spectrum screen and more effectively promote the Commission’s competition policy objectives.

Even though the Commission declined to adopt “specific weighting factors for each spectrum band,”<sup>14</sup> the fact is the current screen implicitly assumes a weighting factor of one, in which a megahertz equals a megahertz no matter what spectrum band. According to this unstated but powerful assumption, the Commission will continue to treat spectrum in the 700 MHz band, the 2.5 GHz band, and other mobile broadband spectrum bands as completely interchangeable in determining whether a transaction exceeds the spectrum screen in any local market. This “one megahertz equals one megahertz” weighting across all bands directly contradicts the express findings in the *Report and Order* that “not all spectrum is created equal”

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<sup>13</sup> See, e.g., *Motor Vehicle Mfrs. Ass’n of the U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

<sup>14</sup> *Id.* ¶ 274

and the “substantial record evidence” demonstrating the distinction among low and higher band spectrum,<sup>15</sup> which directly affect a firm’s competitiveness.

The Commission should have taken the logical step that follows from its findings and adopted weightings that more accurately reflect the competitive utility of different bands. Doing so now would correct the logical disconnect between the *Report and Order*’s findings and the flawed assumptions that continue to underlie the current screen. The Commission should not, on the one hand, conclude that the important differences among spectrum bands are a “key factor” in carrying out its spectrum policies, and, on the other hand, continue to apply a spectrum screen that assumes all spectrum is the same. The courts have held that such patent internal inconsistencies may render agency decision-making arbitrary and capricious.<sup>16</sup>

To be sure, the Commission stated it will consider the significant differences between low and higher band spectrum “as a key factor in our case-by-case analysis” of transactions that trigger the screen.<sup>17</sup> The Commission also said it would scrutinize transactions involving low-band spectrum, and that “further concentration of below-1-GHz spectrum” would be treated as an “enhanced factor” in its case-by-case analysis of wireless mergers.<sup>18</sup> Under this “enhanced”

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<sup>15</sup> *Id.* ¶¶ 3, 54.

<sup>16</sup> *See, e.g., GameFly, Inc., v. Postal Reg. Commission*, 704 F.3d 145, 149 (D.C. Cir. 2013) (agency order was arbitrary and capricious because it rested on an unstated assumption that conflicted with findings set forth in the order); *Air Line Pilots Assn. v. U.S. Dept. of Transportation*, 3 F.3d 449, 450 (D.C. Cir. 1993) (remanding agency decision because it was internally inconsistent, arbitrary and capricious); *Gen. Chem. Corp. v. United States*, 817 F.2d 844, 846 (D.C. Cir. 1987) (finding agency action arbitrary and capricious because it was “internally inconsistent and inadequately explained”).

<sup>17</sup> *Report and Order* ¶ 274. *See also id.* ¶ 289 (“[W]e recognize that differences between spectrum bands can be relevant to a determination of the public interest in the context of reviewing transactions. We will consider such differences in our case-by-case review of specific transactions.”).

<sup>18</sup> *Id.* ¶¶ 283, 288.

analysis, an entity seeking to acquire approximately one-third or more of suitable and available low-band spectrum in a market will be expected to provide “a detailed demonstration regarding why the public interest benefits outweigh harms.”<sup>19</sup> Absent such a showing, “any transaction that would result in an entity holding approximately one-third or more of suitable and available below-1-GHz spectrum will more likely be found to cause competitive harm in our case-by-case review.”<sup>20</sup> The Commission further concluded that “even greater concerns” will be raised “where the proposed transaction would result in an assignee or transferee that already holds approximately one third or more of below-1-GHz spectrum in a market acquiring additional below-1-GHz spectrum in that market, especially with regard to paired low-band spectrum. In these cases, the demonstration of the public interest benefits of the proposed transaction would need to clearly outweigh the potential public interest harm associated with such additional concentration of below-1-GHz spectrum, irrespective of other factors.”<sup>21</sup>

This approach, however, provides little guidance to FCC staff and license transfer applicants. It creates uncertainty about whether a particular spectrum transaction raises legitimate competition concerns that should trigger greater Commission scrutiny, and about consistency. Moreover, while the Commission asserts its staff may prove able to mitigate some of the consequences of the screen’s overweighting of mid- and high-band spectrum relative to low-band spectrum through after-the-fact application of an “enhanced factor” for low-band spectrum, the unspecified “enhanced factor” does not relieve mid- and high-band spectrum

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<sup>19</sup> *Id.* ¶ 286.

<sup>20</sup> *Id.*

<sup>21</sup> *Id.* ¶ 287.

transactions from unwarranted regulatory scrutiny.<sup>22</sup> In other words, while the low-band enhancement factor may allow staff to bring additional spectrum within the scope of review, the enhancement factor does not exclude pro-competitive or competitively inconsequential higher-frequency transactions from the screen and, as result, mitigates at best only half the problem that the undifferentiated screen creates. Without a spectrum weighting system, it is unclear how the FCC will factor in the differences among bands.

More fundamentally, such an *ad hoc* approach risks undermining the very purpose of the spectrum screen. The spectrum screen is a processing tool that seeks to sort local markets affected by a proposed transaction into two categories: markets that potentially raise spectrum aggregation concerns and therefore require closer, case-by-case scrutiny, and markets that do not and therefore generally do not require closer scrutiny.<sup>23</sup> Without spectrum weightings, however, applicants will continue to treat all spectrum as equal in listing the local markets in which the proposed transaction exceeds the spectrum screen. The screen results will thus be highly inaccurate, failing to account for a “key factor” – the propagation and operational distinctions between spectrum bands – that is directly relevant to determining whether a transaction raises potential competition concerns.<sup>24</sup> As Sprint previously described, the screen will yield numerous

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<sup>22</sup> See *id.* ¶ 265.

<sup>23</sup> See *Applications of AT&T Inc. and Dobson Communications Corporation; For Consent to Transfer Control of Licenses and Authorizations*, Memorandum Opinion and Order, 22 FCC Rcd 20295, ¶ 30 (2007) (The spectrum screen “is designed to be conservative and ensure that any markets in which there is potential competitive harm based on spectrum aggregation is identified and subjected to more in-depth analysis.”); *Applications of AT&T Inc. and Centennial Communications Corp. For Consent of Licenses, Authorizations, and Spectrum Leasing Arrangements*, Memorandum Opinion and Order, 24 FCC Rcd 13915, ¶ 46 (2009) (“The initial screen is designed to be conservative and ensure that we do not exclude from further scrutiny any geographic areas in which the potential for anticompetitive effects exists.”).

<sup>24</sup> *The Report and Order* (at n.730), points out that the modified spectrum screen does take into account white spaces and other limitations involving EBS spectrum. While this is true, it is

“false positives” in some cases and “false negatives” in others. The false positives will subject transactions involving higher band spectrum to greater scrutiny even where such transactions raise no significant spectrum aggregation issues; an unweighted screen risks creating mistaken impressions regarding the competitive effects of such transactions and imposing unnecessary delays and uncertainty in the Commission’s review of pro-competitive, pro-consumer transactions. At the very least, false positives directly harm the subject operator, subjecting it to higher transaction costs and delaying its access to needed spectrum. False *negatives*, by contrast, potentially harm not only competing operators but also downstream competition. False negatives fail to subject to closer scrutiny (and potential conditions or denial) a transaction that reduces the ability of rival firms to respond to an attempted exercise of market power by an operator acquiring additional, competitively-significant spectrum.

Rulemakings are an important administrative tool for avoiding these dangers by establishing clear “rules of the road” to guide Commission review of license transfer applications. Indeed, the Commission launched this proceeding “to ensure that our policies and rules afford all interested parties greater certainty, transparency and predictability to make investment and transactional decisions, while also promoting the competition needed to ensure a vibrant, increasingly mobile economy driven by innovation.”<sup>25</sup> The spectrum screen adopted in the *Report and Order* falls far short of these objectives by failing to incorporate different

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also true that the new screen adopted in the *Report and Order* still fails to account for the significant propagation and other technical differences among spectrum bands which are relevant to the Commission’s competitive analysis.

<sup>25</sup> *Notice* ¶ 15. *See also id.* ¶ 1 (“We initiate this proceeding to provide rules of the road that are clear and predictable, and that promote the competition needed to ensure a vibrant, world-leading, innovation-based mobile economy.”); *Report and Order* ¶ 68 (“We therefore find it essential to establish clear and transparent policies that will preserve and promote competition in the future, promote the efficient use of spectrum, ensure competitive mobile broadband service in rural areas, and avoid an excessive concentration of licenses.”).

spectrum weightings. Incorporating these weightings would not undermine the flexibility of the screen or prevent the Commission from addressing competitive issues raised by any particular transaction. To the contrary, adopting different categories of spectrum weightings will make the spectrum screen a more precise, transparent, and effective instrument for assessing the competition issues a proposed transaction may present and promoting the public interest.<sup>26</sup>

#### **IV. THE RECORD SUPPORTS THE ADOPTION OF SPECTRUM WEIGHTING**

In the *Notice*, the Commission asked parties to submit specific weighting proposals.<sup>27</sup> In response, a number of commenters proposed a range of weighting mechanisms to account for the significant variation in the competitive utility of different frequency bands now available for mobile broadband networks.<sup>28</sup> An even larger contingent of commenters supported adoption of some mechanism to reflect the competitive differences among bands, without necessarily formulating a specific approach.<sup>29</sup> Sprint itself submitted two spectrum weighting proposals.<sup>30</sup>

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<sup>26</sup> Indeed, as Sprint noted in numerous filings, weightings could be adjusted periodically if the Commission subsequently thought that, for instance, differences between bands had decreased. In other words, spectrum weighting provided a more flexible approach to evaluating spectrum aggregation.

<sup>27</sup> *Notice* ¶¶ 36-39.

<sup>28</sup> The *Report and Order* cites a number of parties aside from Sprint that submitted spectrum weighting proposals, including Professor John Peha and Public Knowledge, Free Press, and Professor Peter Cramton (in a declaration submitted on behalf of T-Mobile in the Verizon-SpectrumCo proceeding). *Report and Order* at n.703-04.

<sup>29</sup> See, e.g., Comments of the Competitive Carriers Association at n.33 (Nov. 28, 2012) (“[T]o make the screen reflective of the technical, economic, and deployment differences that different spectrum bands pose for carriers (and competition), the Commission should acknowledge the disparate technical and economic characteristics of different spectrum bands. This could include assigning weights to spectrum bands based on reported valuation by carriers, engineering-based calculations, benchmarks to auction results and secondary market transactions, or some combination thereof.”); Comments of Free Press at 11 (Nov. 28, 2012) (“But today this simplistic method [of treating all spectrum bands equally] ignores the large differences in value and utility between bands like 700 MHz and BRS. . . . If the Commission maintains a case-by-case evaluation approach, it has the flexibility and the duty to consider the

Sprint’s spectrum weighting proposals were based on detailed engineering analyses and focused on the different propagation characteristics of the relevant frequency bands and resulting disparities in deployment costs. With these and other weighting proposals in the record, the Commission had a reasonable basis for fashioning a fact-based, efficacious spectrum weighting policy in this proceeding.

On February 11, 2014, Sprint proposed weights for each frequency band covered under the spectrum screen based on its propagation characteristics and corresponding deployment costs in three typical wireless broadband network environments: low population density rural areas, medium population density suburban areas, and high population density urban areas.<sup>31</sup> Based on the approximate distribution of rural, suburban, and urban populations across the United States, Sprint applied an average weight to each band covered by the screen.<sup>32</sup> On May 5, 2014, Sprint provided the Commission with an alternative simplified approach for spectrum weighting under the screen, proposing a three-tiered system that assigned weights of 1.5 for low-band spectrum,

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difference in value between spectrum blocks, which is determined by wavelength, contiguous block size, block pairing, interference issues, market density, and market demographics.”); Jon Peha Public Knowledge Comments (arguing that the Commission’s spectrum screen “must treat spectrum assignments differently depending on their frequency bands,” and proposing numerous ways in which the Commission can do so); Reply Comments of Leap Wireless International, Inc., and Cricket Communications, Inc. at 6-8 (Jan. 7, 2013) (“The Commission should seize on this proposed weighting approach to reflect the propagation characteristics and device ecosystem of each band, including additional bands that are now suitable and available for mobile broadband services.”); Comments of the Writers Guild of America, West, Inc. at 9 (Nov. 28, 2012) (“[A]ppropriate weighting of spectrum to include qualitative differences is the critical first step towards a spectrum policy that promotes competition and limits control of the most valuable spectrum by the top firms within the industry. We urge the Commission to develop a system that weights valuable spectrum and limits the amount of such spectrum any one company can control.”).

<sup>30</sup> Sprint February 11 Ex Parte; Sprint May 5 Ex Parte.

<sup>31</sup> Sprint February 11 Ex Parte at 21-23.

<sup>32</sup> *Id.* at 23-24.

1.0 for mid-band spectrum, and 0.5 for high-band spectrum.<sup>33</sup> This approach reflects the fact that there are natural gaps of several hundred megahertz between groupings of low-, mid-, and high-band spectrum covered under the screen, and accounts for the disparate propagation characteristics of these spectrum groupings.

Despite the Commission's call for spectrum weighting proposals and the extensive record developed in response to this request, the *Report and Order* gave short shrift to the parties' weighting advocacy. In a few short paragraphs, the Commission rejected specific spectrum weightings based on essentially conclusory statements with no record support. The *Report and Order*, for example, questions the relevance of the large separations between low-band, mid-band, and high-band spectrum by noting (i) the separation between 1.9 GHz mid-band and the 2.6 GHz high-band spectrum is narrower if the 2.3 GHz WCS spectrum is considered to be high-band spectrum; (ii) the absolute value and ratio of the separation among band categories is different for each separation; and (iii) the largest single separation of proximate bands occurs between low-band and mid-band spectrum.<sup>34</sup> While these statements are true, none of them are relevant to whether the different spectrum bands offer different levels of performance or produce different competitive consequences for the wireless broadband market. On the contrary, and as explained above, the *Report and Order* concludes that deployments on lower frequency spectrum

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<sup>33</sup> Sprint May 5 Ex Parte at 22-23. Sprint's simplified alternative was not, as the *Report and Order* claims, inconsistent with its earlier proposal, but rather a simplification of it. See *Report and Order* ¶ 274, n.726. Indeed, the simplification was provided in response to the staff's expressed interest in a less granular, weighted spectrum screen offering enhanced transparency and ease of application.

<sup>34</sup> *Report and Order* ¶ 55, n.192.

allow for competitively meaningful economies in deployment and operation as a result of materially superior indoor and outdoor coverage compared to higher-frequency bands.<sup>35</sup>

Similarly, the *Report and Order* alludes to “certain issues” raised by basing spectrum weightings on the “value” of spectrum.<sup>36</sup> The *Report and Order* cites Sprint’s spectrum weighting proposals and suggests that they are based on spectrum valuations.<sup>37</sup> Sprint’s spectrum weightings, however, are not based on spectrum values. Sprint’s proposed spectrum weights are based on propagation characteristics – the primary determinant of a spectrum band’s deployment costs and the competitive utility of that spectrum.<sup>38</sup> Sprint agrees with the Commission that “prices paid at auction vary significantly over time based on a variety of factors not necessarily related to the characteristics of the spectrum being auctioned.”<sup>39</sup> This conclusion is precisely why Sprint proposed different categories of spectrum weighting based on different spectrum bands’ technical characteristics rather than different bands’ spectrum value.<sup>40</sup>

The *Report and Order* also alludes to “certain issues” regarding the assumptions that underlie a spectrum weighting approach based on propagation characteristics. The only

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<sup>35</sup> See *supra* Part II.

<sup>36</sup> *Report and Order* ¶ 275.

<sup>37</sup> *Id.* at n.729.

<sup>38</sup> See, e.g., Sprint February 11 Ex Parte at 18-20.

<sup>39</sup> *Report and Order* ¶ 275. Sprint addressed the spectrum acquisition costs of different bands, including auction prices, only in rebutting AT&T’s claims that differential signal propagation across frequency bands is reflected in disparate auction or secondary market prices for those bands and should not affect the Commission’s spectrum screen calculations. See Sprint April 4 Ex Parte at 8-14.

<sup>40</sup> Sprint developed its weighting proposal based on propagation and network implementation costs precisely because of the dynamic variability of spectrum pricing and criticism of an earlier-proposed weighting plan based on spectrum values. See Declaration of Peter Cramton attached to Petition to Deny of T-Mobile USA, Inc., WT Docket No. 12-4, Exhibit C (Feb. 21, 2012).

explanation of these “issues,” however, is a vague footnote that questions various assumptions concerning signal propagation in rural areas, but provides little explanation for the Commission’s apparent concerns about these assumptions and why they warrant not adopting spectrum weightings.<sup>41</sup> The *Order* goes on to express a generalized concern that “imposing a weighting schema . . . may fail to accurately reflect [the] competitive significance” of different frequency bands.<sup>42</sup>

Again, however, the Commission offers no explanation to back up this conclusory finding. On the contrary, failing to adopt weighting, while including previously-excluded spectrum with well-documented regulatory and licensing encumbrances that materially impact competitive utility, results in a spectrum screen that does not accurately reflect the competitive significance of different frequency bands. The Commission’s failure to adopt a weighted spectrum screen leaves it to the uncertainties of “case-by-case” analysis to rectify the screen’s distorted output in evaluating spectrum transactions. As a matter of law, the Commission “must

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<sup>41</sup> *Report and Order* ¶ 275, n.728. In any case, consistent with the Commission’s findings and conclusions with respect to the superior propagation characteristics of low-band spectrum, the weight of the record evidence identifies variations in performance characteristics by band category. As Sprint explained, variations in different bands’ distribution of signal-to-interference-and-noise ratio (“SINR”) across a geographic area affect how much throughput an operator can provide using different types of spectrum in that area. Given a fixed number of sites, SINR distribution is emphatically not constant across frequencies. Instead, large gaps in SINR distribution, and thus large gaps in performance, exist: high-band spectrum exhibits materially lower SINR distribution than mid-band spectrum, which, in turn, exhibits materially lower SINR distribution than low-band spectrum. These meaningful disparities in SINR distribution translate into meaningful disparities in access speeds, throughput, and consistency – factors the Commission has identified as important elements of consumer decision making. *See, e.g., Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993 Annual Report and Analysis of Competitive Market Conditions with Respect to Mobile Wireless, Including Commercial Mobile Services*, Sixteenth Report, 28 FCC Rcd 3700, ¶ 290 (2013); *Preserving the Open Internet; Broadband Industry Practices*, 25 FCC Rcd 17905, ¶¶ 32-33 (2010).

<sup>42</sup> *Report and Order* ¶ 276.

examine the relevant data and articulate a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made.’”<sup>43</sup> The *Report and Order* does not satisfy this requirement.

By adding a large volume of high-band spectrum to the screen without any corresponding weighting, the Commission has fashioned an initial screen mechanism that will fail to “flag” competitively problematic transactions. At the same time, the revised screen will unnecessarily flag for increased scrutiny transactions involving licensees, such as Sprint, that hold significant amounts of higher band spectrum, simply because the screen fails to account for spectrum band differences. While the Commission maintains that its case-by-case analysis can account for differences between bands and attempt to address them, its flawed approach to the screen will, at a minimum, generate uncertainty and extend the processing timetable for license transfer applications. In contrast, granting the instant petition and adopting a weighting methodology will transform the screen into a more accurate and effective processing tool.

The *Report and Order* erroneously claims that Sprint did not justify its three-tiered weighting system for low-band, mid-band, and high-band spectrum.<sup>44</sup> In fact, as indicated above, Sprint pointed to the natural gaps between the groupings of low-, mid-, and high-band spectrum, and cited the dramatically different propagation characteristics of these three frequency band groupings.<sup>45</sup> In addition, as Sprint described in the record, this three-tiered approach would leave reasonable headroom for all competing carriers, including smaller regional and rural carriers, to engage in spectrum transactions that do not result in undue spectrum

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<sup>43</sup> *Motor Vehicle Mfrs. Ass’n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (citations omitted).

<sup>44</sup> *Report and Order* ¶ 274.

<sup>45</sup> Sprint May 5 Ex Parte at 5-16.

concentration. Sprint proposed this three-tiered approach as only one among a range of reasonable options for improving the spectrum screen by incorporating frequency-specific weightings for spectrum bands with demonstrably different impacts on the long-term sustainability of effective wireless broadband competition.

Perhaps the Commission's dismissal of spectrum weightings (other than the assumption that all spectrum is equal) is premised on an expectation that such weightings must approach perfect accuracy. Sprint acknowledges that its spectrum weighting proposals rely on assumptions and estimates that balance the differences among bands for competitive analysis and the need for a spectrum screen that is clear and easy to administer. There is no "perfect" way to strike this balance. Perfection, however, is not only unrealistic, it is unnecessary. Administrative agencies often are called on to adopt policies based on practical judgments about striking the right balance between competing objectives.<sup>46</sup>

Certainly, the spectrum weightings proposed by Sprint and others would better reflect the competitive impact of different spectrum bands than the Commission's current screen, which continues to assume, contrary to the explicit findings in the *Report and Order*, that all spectrum should be equally weighted. The current screen will yield the false positives and negatives described above and infuse the transaction review process with significant uncertainty and unnecessary delay. Sprint's proposals and the record in this proceeding provide the Commission with a sound basis for implementing a reasonable spectrum weighting framework that improves

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<sup>46</sup> See, e.g., *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 865-66 (1984) (explaining that "it is entirely appropriate" for agencies to "resolv[e] the competing interests which Congress itself either inadvertently did not resolve, or intentionally left to be resolved by the agency").

the screen's accuracy, transparency and predictability and promotes the Commission's spectrum management goals.<sup>47</sup>

## VI. CONCLUSION

For the foregoing reasons, Sprint requests that the Commission reconsider the *Report and Order* and incorporate frequency-specific spectrum weightings in its spectrum screen.

Respectfully submitted,

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<sup>47</sup> Contrary to the suggestion in the *Report and Order* (¶ 277), Sprint does not view the spectrum screen as a cap or as a safe harbor and fully recognizes that the screen acts only as a processing tool for identifying local markets that warrant closer scrutiny in proposed spectrum acquisitions. *See, e.g.*, Reply Comments of Sprint Corporation at 18 (Jan. 7, 2013) (“Where a transaction exceeds the spectrum screen, the Commission should preserve the flexibility it has under its current screen rules and policies to assess the specific facts and circumstances without prejudgment or a heightened burden of proof. . . . [T]he spectrum screen should continue to serve as a convenient tool for identifying transactions that warrant further scrutiny on a case-by-case basis, not as a mechanism for making even presumptive public interest determinations.”).