Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
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Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands	)	WT Docket No. 12-70
	)	
Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626.5 MHz and 2483.5-2500 MHz, and 2020-2020 and 2180-2200 MHz	)	ET Docket No. 10-142
	)	
Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz, and 2175-2180 MHz Bands	)	WT Docket No. 04-356

COMMENTS OF VERIZON WIRELESS

Verizon Wireless supports the Commission's ongoing efforts to make additional spectrum available for commercial use in order to meet consumers' rapidly growing demands for the innovative devices, applications, and services that can be provided over advanced wireless broadband services. The *NPRM* proposes service rules that would provide 40 MHz of paired spectrum in the 2 GHz band (2000-2020 MHz paired with 2180-2200 MHz) with greater flexibility to deploy mobile broadband under the existing band plan. The *NOI*, in turn, proposes the further step of modifying the band plan to allocate a total of 65 MHz of flexible use terrestrial spectrum by creating a 35 MHz AWS-extension block (1695-1710 MHz paired with 2180-2200 MHz) and a 30 MHz PCS-extension block that could be used as supplemental downlink (1995-2025 MHz unpaired). Under either proposal, the Commission would facilitate the further

provision of mobile broadband in the 2 GHz band using spectrum that is currently unused or underused.

As the Commission has explained, "[w]ireless broadband is poised to become a key platform for innovation in the United States over the next decade."[1] But the Commission also has correctly recognized that "[t]he growth of wireless broadband will be constrained if government does not make spectrum available to enable network expansion and technology upgrades . . . [resulting in] higher prices, poor service quality, an inability for the U.S. to compete internationally, depressed demand and, ultimately, a drag on innovation."[2]

Consumer demand for mobile broadband services is exploding.[3] CTIA recently reported that data usage on wireless networks grew 123 percent during 2011 (more than 100 percent for the third year in a row), and now amounts to more than 866 billion megabytes a year.[4]

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[1] *See Connecting America: The National Broadband Plan*, at 75 (FCC 2010), http://download.broadband.gov/plan/national-broadband-plan.pdf ("*National Broadband Plan*").

[2] *Id.* at 77. *See also NPRM* ¶ 77; Presidential Memorandum, *Unleashing the Wireless Broadband Revolution*, 75 FR 38387 (2010) ("America's future competitiveness and global technology leadership depend, in part, upon the availability of additional spectrum. . . . Expanded wireless broadband access will trigger the creation of innovative new businesses, provide cost-effective connections in rural areas, increase productivity, improve public safety, and allow for the development of mobile telemedicine, telework, distance learning, and other new applications that will transform Americans' lives.").

[3] *See, e.g.*, FCC Staff Technical Paper, "Mobile Broadband: The Benefits of Additional Spectrum," at 5, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-302324A1.pdf (Oct. 2010) ("Mobile Broadband Technical Paper") ("[a]s smartphones, laptops, and other devices become increasingly integral to consumers' mobile experiences, mobile data demand is expected to grow between 25 and 50 times current levels within 5 years"); Cisco, "Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2011–2016," at 5 (Feb. 2012), http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.pdf ("Cisco 2011-2016 Forecast").

[4] Reply Comments of CTIA – The Wireless Association, WT Docket No. 11-186, at 5 (filed Apr. 30, 2012).

Smartphone adoption also continues to surge, driving up data consumption: the number of smartphones on wireless providers' networks increased by 43 percent in 2011 to 111.5 million.[5] As consumers experience higher speeds through the use of smartphones, they consume more data, using exponentially more spectrum capacity than traditional phones.[6] Similarly, the rapid adoption of tablets places even more demand on spectrum resources as tablets use approximately 120 times the capacity of traditional phones.[7] According to public estimates, the average smartphone will generate 2.6 GB of traffic per month in 2016 (a 17-fold increase over the 2011 average of 150 MHz per month), aggregate smartphone traffic in 2016 will be 50 times greater than it is today, and mobile-connected tablets alone will generate as much traffic in 2016 as the entire global mobile network in 2012.[8]

These trends mean that carriers will increasingly require more spectrum to meet their customers' needs as more and more customers rely on wireless for their broadband needs, buy more devices that access the Internet, use those devices more hours each day, and download

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5 *Id.*

6 *See* Julius Genachowski, Chairman, Federal Communications Commission, Remarks As Prepared For Delivery, CTIA Wireless 2011 at 5 (March 22, 2011), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-305309A1.pdf ("Genachowski CTIA Remarks"). *See also National Broadband Plan* at 84 ("More bandwidth begets more data-intensive applications which begets a need for more bandwidth. Indeed, it is this virtuous cycle that has made broadband an innovation growth engine over the past decade – but also makes forecasting difficult."); Rysavy Research, "The Spectrum Imperative: Mobile Broadband Spectrum and its Impacts for U.S. Consumers and the Economy, An Engineering Analysis, at 4 (Mar. 16, 2011), http://www.mobilefuture.org/page/-/rysavy-spectrum-effects-301611.pdf ("As mobile devices become more powerful, as device resolution increases, as users employ more applications and as connectivity increasingly is embedded in virtually every manner of machine, this flow of bits is increasing at a dramatic rate."); Mobile Broadband Technical Paper at 9 ("Devices with enhanced functionality tend to consume more data.").

7 *See* Genachowski CTIA Remarks at 5.

8 *See* Cisco 2011-2016 Forecast at 3.

more applications that require large amounts of bandwidth. The link between the growing demand for wireless broadband services and the need for a greater supply of spectrum to meet that demand is well-established. The Commission predicts that, if additional spectrum is not made available in the near-term, mobile data demand will likely exceed capacity by 2014, resulting in a broadband spectrum deficit of nearly 300 MHz.[9]

The proposals in the *NPRM* and *NOI* in this proceeding are an excellent means of filling part of this spectrum demand. Indeed, by providing flexibility in the 2 GHz band as proposed, the Commission will promote mobile broadband deployment. If the Commission adopts the proposal in its *NPRM*, it would provide licensees with greater flexibility to deploy terrestrial services without having to comply with the Commission's existing Ancillary Terrestrial Component rules. Such an action could promote the deployment of terrestrial mobile broadband services in this band. If it adopts its *NOI* proposal, the Commission would promote deployment even further by increasing the amount of spectrum available for mobile broadband in the 2 GHz band. Under either of these proposals, additional spectrum could be added to make even more spectrum available if/when it becomes available. For example, the 2155-2180 MHz band (*i.e.*, AWS-3 and the J-Block) could be added to either the *NPRM* or *NOI* band plan as supplemental downlink or as paired spectrum with 1755-1780 MHz if/when it becomes available (if the *NOI* proposal is adopted) or 1675-1710 MHz (if the *NPRM* proposal is adopted). Adoption of any of these proposals is one important step to encourage commercial terrestrial deployment of unused

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[9] *See, e.g.*, Mobile Broadband Technical Paper at 17 (stating that "we estimate that an additional 275 MHz of spectrum will be required to meet mobile data demand in 2014"); *National Broadband Plan* at 84 ("In order to meet growing demand for wireless broadband services, and to ensure that America keeps pace with the global wireless revolution, 500 megahertz should be made newly available for mobile, fixed and unlicensed broadband use over the next 10 years.… Of this amount, 300 megahertz between 225 MHz and 3.7 GHz should be made available for mobile flexible use within five years.").

or underused spectrum in order to meet consumers' needs for the immediate future. The Commission should act promptly to do so.

Respectfully submitted,

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