Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of
Use of Spectrum Bands Above 24 GHz For Mobile Radio Services
Amendment of the Commission’s Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands
Implementation of Section 309(j) of the Communications Act – Competitive Bidding, 37.0-38.6 GHz and 38.6-40.0 GHz Bands
Petition for Rulemaking of the Fixed Wireless Communications Coalition to Create Service Rules for the 42-43.5 GHz Band

COMMENTS OF MOBILE FUTURE

Mobile Future\(^1\) submits these comments in response to the Federal Communications Commission’s Notice of Inquiry (“NOI”) beginning to examine the potential for providing mobile radio services in spectrum bands above 24 GHz.\(^2\) The Commission’s exploration of spectrum bands that previously were not thought to be viable for mobile use is a very positive step in the long-term effort to ease the spectrum shortage. Some spectrum bands above 24 GHz may be good candidate bands in which to explore advanced sharing technologies that may hold the promise of unlocking additional spectrum resources in the future. However, it is critical that efforts in this proceeding do not delay or supersede Commission efforts to bring lower band

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\(^1\) Mobile Future is an association of businesses and non-profit organizations interested in and dedicated to
spectrum to market for consumers. Clearing and reallocating low- and mid-band spectrum for exclusive licensed use by commercial operators continues to hold the most promise for the continued innovation, investment, and deployment of mobile broadband networks.

I. **SPECTRUM BANDS ABOVE 24 GHZ MAY HELP ALLEVIATE THE SPECTRUM CRUNCH, BUT THESE EFFORTS SHOULD PROCEED IN CONJUNCTION WITH EFFORTS TO MAKE ADDITIONAL LOWER BAND SPECTRUM AVAILABLE FOR LICENSED COMMERCIAL USE**

Mobile Future and its members strongly support the Commission’s efforts to help alleviate the spectrum shortage facing mobile broadband consumers. Additional spectrum resources are essential to meeting still-increasing consumer demand and spurring continued U.S. economic growth and development. It is therefore critical that the Commission’s exploration of the bands above 24 GHz be done while the Commission continues to pursue other alternatives for making lower band spectrum (below 5 GHz) available for exclusive licensed commercial use in the near to immediate future.

A. **Consumer Demand for Spectrum Continues to Grow Rapidly**

Consumer demand for mobile broadband continues to grow exponentially. Indeed, data traffic across America’s mobile networks increased by another 120 percent from 2012 to 2013 alone, from 1.47 trillion megabytes in 2012 to 3.23 trillion megabytes in 2013. The demand for data will only continue to increase as analysts estimate that 58 percent of all American adults...
now have a smartphone. Further, 45 million Americans use mobile phones as their primary Internet access device and one out of every ten Americans accesses the Internet only by using a smartphone. Mobile data traffic is expected to grow at an annual rate of 50 percent from 2013 to 2018, increasing from 389 petabytes to 2.954 exabytes over that same period.

B. Consumer Demand Has Spurred Investment and Technological Innovation, Making Mobile a Key Growth Engine of the U.S. Economy

The mobile ecosystem is a key growth engine of the U.S. economy, propelling our nation’s prosperity. In the past five years, United States wireless providers have made $134 billion in capital investments. Capital investment increased by more than 10 percent from 2012 to 2013, from $30.1 billion to $33.1 billion. Already, 3.8 million Americans have jobs directly or indirectly tied to the wireless industry, accounting for 2.6 percent of all U.S. employment, and continued wireless investment is projected to create 1.2 million new jobs by 2017. As of April 2012, the U.S. wireless industry was valued at $196 billion, which is more than the each of

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6 Id. at ¶ 75.
11 Seventeenth Wireless Competition Report, at ¶ 170.
the publishing, agriculture, hotels and lodging, air transportations, and motor vehicle manufacturing segments.\textsuperscript{14}

In addition to spurring carriers to innovate and invest in networks and technology, consumer demand for mobile data has increased carrier demand for spectrum resources, as evidenced by auction participation. Through 2014, carriers had paid $53 billion to the United States Treasury to acquire spectrum in FCC spectrum auctions.\textsuperscript{15} Aggregate bidding in the AWS-3 auction has now reached more than $44.7 billion,\textsuperscript{16} nearly four times the reserve price and three times early estimates of the auction’s final take.\textsuperscript{17} There is no evidence that demand for spectrum, the critical input to our nation’s wireless economy, will decrease any time soon.

\textbf{C. Commission Efforts in This Proceeding Must Not Supersede or Delay Efforts to Bring Lower Band Spectrum to Market for Consumers}

The Above 24 GHz NOI is a positive step toward employing new technological advances that can help provide services to consumers, but the Commission must continue to pursue other, proven solutions to the spectrum crunch aggressively.\textsuperscript{18} This proceeding is in its infancy and extensive research, analysis of proposals, and opportunities for (and consideration of) public comment must be completed before consumers will see the benefits of access to spectrum above 24 GHz. Further, the Commission does not anticipate that the bands above 24 GHz will be

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\textsuperscript{14} The Essential Engine of US Economic Growth at 1.
\textsuperscript{18} The NOI states, “This proceeding is not a substitute for our efforts to make additional lower frequency spectrum available for mobile services, but rather is a supplement to those efforts.” Above 24 GHz LOI, 29 FCC Rcd at 13021, ¶ 2.
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utilized to provide stand-alone mobile services, but to serve as supplementary channels to deliver ultra-high data rates in specific places, as a single component of broader service packages that will include use of lower band spectrum to ensure ubiquitous coverage.\textsuperscript{19} For these reasons, it is imperative that the Commission continue its other efforts to free lower band spectrum for mobile broadband.

In short, the above 24 GHz bands are not a cure all for the spectrum crunch. This proceeding may prove to be part of the solution over the long term, but spectrum above 24 GHz will only be part of a more complex approach that includes reallocation of additional spectrum below 5 GHz over the short and intermediate terms for exclusive commercial use. Only by providing mobile broadband operators with exclusive access to the lower band spectrum resources they need can the Commission promote an ecosystem that meets consumer demand, spurs innovation and job creation, and assists America in retaining its leadership role in the global economy. The Commission therefore must continue to proceed in its ongoing efforts to conduct the 600 MHz band incentive auction, and to seek additional opportunities in coordination with NTIA to reallocate federal spectrum for commercial use.

\textbf{II. \quad SOME ABOVE 24 GHZ BANDS MAY BE GOOD CANDIDATE BANDS IN WHICH TO EXPLORE ADVANCED SHARING TECHNOLOGIES}

Some spectrum bands above 24 GHz may be good candidate bands in which to explore advanced sharing options that may hold the promise of unlocking spectrum resources in the future. Making some spectrum above 3 GHz available on a shared basis may be a viable tool for carriers to offload traffic from spectrum below 3 GHz that is best suited for mobile broadband services. Because spectrum above 24 GHz may be used with tightly packed base stations possessing dynamic beam forming capabilities, the Commission itself observes that it is possible

\textsuperscript{19} \textit{Above 24 GHz NOI}, 29 FCC Red at 13023, ¶ 7.
that users may be able to share the same channels in ways that are not possible at lower
frequencies using current technology.\textsuperscript{20} In addition, the larger swaths of spectrum that could
become available in the above 24 GHz bands may facilitate spectrum sharing efforts.

\textbf{III. CONCLUSION}

Mobile Future supports the Commission’s efforts to examine the provision of mobile
services in the bands above 24 GHz, but these efforts must not supplant the Commission’s
ongoing efforts to bring additional low- and mid-band spectrum to market for consumers.

Respectfully Submitted,

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\textsuperscript{20}Above 24 GHz NOI, 29 FCC Red at 13047 ¶ 97.