

**STATEMENT OF
COMMISSIONER JESSICA ROSENWORCEL**

Re: Amendment of Part 15 of the Commission's Rules for Unlicensed Operations in the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and Duplex Gap, and Channel 37; Amendment of Part 74 of the Commission's Rules for Low Power Auxiliary Stations in the Repurposed 600 MHz Band and 600 MHz Duplex Gap; Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions;

Promoting Spectrum Access for Wireless Microphone Operations; Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions;

In this pair of rulemakings the Commission asks a lot of questions about the 600 MHz band. The answers we provide will have historic consequences for broadcasting, broadband, wireless microphones, medical telemetry, radio astronomy—and unlicensed spectrum.

It is this last service—unlicensed spectrum—that I want to focus on now, because I think what we are doing here in the 600 MHz band requires context. So I want to pause for a moment and look back to when this agency first started asking questions about unlicensed spectrum.

Rewind 30 years. Three decades ago the Commission was looking at what to do with a handful underused frequencies, including portions of the 900 MHz, 2.4 GHz, and 5.8 GHz bands. These were airwaves that had been designated for industrial, scientific, and medical uses. But the services we thought would develop in these bands never did, because under our rules they had to contend with interference from some widely used devices, like microwave ovens.

In fact, so little was happening in this spectrum, these airwaves were known as “garbage bands.” The conventional wisdom was that they were junk. They were scraps of spectrum where demand for wireless licenses would just be limited. Cue the sighs.

But this is where the Commission did something interesting. Instead of following the traditional route and trying to provide licenses to allow single operators to control in these bands for specific purposes, the agency called for creative ideas.

Once the Commission got started, the questions multiplied—fast. Why should the Commission dictate what technologies should use these frequencies? What if we set some basic technical parameters instead? And what if we gave the public access to these airwaves?

These were not easy questions to answer. There were skeptics who preferred command and control spectrum policy. There were those for whom thinking differently about interference and optimizing the airwaves was outside of their comfort zone. But

there were also innovative engineers who believed that with the right technical know-how, they could make these bands work.

The Commission ultimately decided to side with these innovators and think differently about this patch of spectrum. As a result, three decades ago the Commission designated its first swath of unlicensed spectrum in these so-called “garbage bands.” Now a lot happened in the interim that was important, including the development of a standard known as 802.11. But step back and you can clearly see how this is the spectrum where Wi-Fi was born. And today, the economic impact of unlicensed spectrum has been estimated at as much as \$140 billion annually. So in retrospect, the leap the Commission took 30 years ago paid off—in a big way. In fact, it may have been the most important experiment ever in wireless communications.

Back to the present. Thirty years later we are facing the same kind of question, but for the next generation of unlicensed services. In short, can we make unlicensed spectrum—the jet fuel of innovation—work in low band spectrum?

I think the answer is yes. But once again we are going to need to think differently. We can start by discarding the tired notion that more Wi-Fi comes only at the expense of those who want to use the airwaves for licensed services. Because good spectrum policy requires both. Because, let’s not forget, nearly one-half of all wireless data connections in this country are now offloaded onto unlicensed spectrum. So it may not be intuitive, but it means that unlicensed spectrum is essential for managing the flow of traffic on licensed airwaves. Moreover, we need to keep an eye on what is coming up next. We have new technologies like dynamic databases can allow multiple services to co-exist harmoniously. And we are seeing new services that can overcome spectral and physical challenges by moving from frequency to frequency, sometimes on spectrum that is licensed and sometimes on spectrum that is unlicensed.

While we plan for this future, we also need to recognize that key services striving for space in the 600 MHz band—like wireless microphones, low power television, medical telemetry, and radio astronomy—deserve attention under the law. Wireless microphones are critical for newsgathering, essential for Broadway productions, and widely-used in churches and schools. These microphones deserve a home. Low power television and translators also play an important role in communities across the country—and can extend the reach of television in rural areas. Plus, lives depend on medical telemetry and radio astronomy helps us understand the universe. That’s big stuff. So we need to pay heed. We also need to be creative. Because I think that our engineers—some of the same smart minds who sparked the invention of Wi-Fi 30 years ago—can find ways to make this all work. I think optimism here can pay dividends that will yield not only more services in the 600 MHz band, but more innovation and more Wi-Fi.

So thank you to the Office of Engineering and Technology and the Wireless Telecommunications Bureau for your hard work, past, present, and future—as you wrestle with the questions these rulemakings pose. Thank you also to Chairman Wheeler

for keeping our efforts in the 600 MHz band barreling down the track and making sure that unlicensed spectrum is on board.