

The Honorable Maria Cantwell
Chairwoman
Senate Committee on Commerce,
Science, and Transportation
420-A Hart Senate Office Building
Washington, D.C. 20510

The Honorable Roger Wicker
Ranking Member
Senate Committee on Commerce,
Science, and Transportation
512 Dirksen Senate Office Building
Washington, D.C. 20510

The Honorable Ben Ray Lujan
Chairman
Subcommittee on Communications,
Media, and Broadband
498 Russell Senate Office Building
Washington, D.C. 20510

The Honorable John Thune
Ranking Member
Subcommittee on Communications,
Media, and Broadband
511 Dirksen Senate Office Building
Washington, D.C. 20510

16 November 2021

Dear Chair Cantwell, Ranking Member Wicker, Chairman Lujan, and Ranking Member Thune,

On behalf of the undersigned organizations, representing hundreds of thousands in the Earth science community, I urge you to question Federal Communications Commission (FCC) Chair nominee Jessica Rosenworcel about her intention to work with the Earth science community to ensure their crucial spectrum needs are valued throughout future spectrum regulatory processes. The weather and Earth system science community relies on spectrum to operate existing, taxpayer funded weather and science assets that save lives and property, and support national, state, and local economies across the U.S. every day.

The weather and Earth system science communities remain extremely concerned about harmful interference to key passive bands near 24-, 50- and 90-GHz, and meteorological spectrum in the L band, especially between 1675-1680 MHz. The FCC's track record is lackluster on protecting these bands that are crucial to the health and safety of Americans and numerous weather sensitive industries.^{1,2} A nationwide survey indicated that weather forecasts generated \$35 billion in economic benefits to U.S. households in 2016.³ Since this monetary value only addresses households and weather, the total value of this spectrum-reliant

¹ Letter from AMS, AGU, and NWA to the Senate Committee on Commerce, Science and Transportation on spectrum issues. May 20, 2021. <https://www.ametsoc.org/index.cfm/ams/about-ams/ams-position-letters/letter-from-ams-agu-and-nwa-to-the-senate-committee-on-commerce-science-and-transportation-on-spectrum-issues/>

² AMS, AGU, and NWA reply comment to FCC on protecting the 24 GHz spectrum band. July 26, 2021. ET Docket No. 21186. GN Docket No. 14-177. <https://www.ametsoc.org/index.cfm/ams/about-ams/ams-position-letters/ams-agu-and-nwa-comments-to-fcc-on-protecting-the-24-ghz-spectrum-band/>

³ Lazo, J. K., Morss, R.E. and Demuth, J.L. (2009). 300 billion served: Sources, perceptions, uses, and values of weather forecasts. Bulletin of the American Meteorological Society 90(6), 785-798. Updated for inflation by NOAA in 2016.

environmental information is likely far larger. According to NOAA, about one-third of the U.S. economy – about \$3 trillion – is impacted by variations in weather and climate.⁴ The spectrum for these systems also supports public and private weather forecasts and warnings that have both economic and human impacts such as evacuation decisions made by local governments; grocery stores and package delivery services planning their supply schedules and routes; aviation; rail and marine transportation; manufacturing decisions; and warfighters seeking reliable weather, water, and marine information to plan missions.

Our two most immediate spectrum concerns include:

- Passive Remote Sensing for Numerical Weather Prediction: It is critical to protect these satellite observations that provide unique and important inputs to weather models. The spectrum adjoining 24-, 50- and 90-GHz provides important information ranging from hurricane forecasting to precipitation estimates to improve mid-to-long term forecasts. These sensitive operational measurements are unique to these spectral bands and cannot be obtained elsewhere.
 - Prior to any further auctions, there must be further research and balanced dialogue to find reasonable solutions that value the full economic significance and impact of weather forecasting and water resources management.
 - In addition, there is a need for funding and technology development to detect contamination in the passive bands and the full impact of growing terrestrial operations on these crucial microwave observations because of the FCC's spectrum allocation actions.
- Real Time Information from Environmental Satellites: Americans and our economy rely on and benefit from real-time information for severe weather, aviation, wildfire prediction and marine transportation provided by NOAA's geostationary weather satellites (GOES).
 - It is critical for the FCC to reverse its April 2020 L-Band GPS and satellite communications decision and prevent any further consideration of Ligado's other proposal directly impacting GOES, NOAA and the weather enterprise's reliance on 1675-1680 MHz.

The Earth science community is concerned about the process that led to these decisions as well. Of note, the FCC appears to have ignored information presented by relevant experts and even federal agencies on both topics.⁵ The FCC ought to not only provide opportunity for stakeholders to present concerns but should also

⁴ <https://www.noaa.gov/weather>

⁵ See footnote 2. Joint Letter to FCC expressing concerns on sharing GOES spectrum. 16 April 2020. <https://www.ametsoc.org/index.cfm/ams/about-ams/ams-position-letters/joint-letter-to-fcc-expressing-concerns-on-sharing-goes-spectrum/>

be required to be transparent about their decision-making rationales before establishing policies that could have such severe consequences.

To address these concerns, we urge the committee to initiate a dialogue with the FCC Chair nominee, including asking her to address the following concerns:

- Under the previous Administration, the FCC moved forward to auction the 24 GHz band, which allowed harmful interference to passive remote sensing water vapor observations that cannot be accessed elsewhere and are crucial to weather forecasting models. In addition, the FCC approved a proposal by Ligado to operate in the L-band in a way that will harmfully interfere with GPS and satellite communications, as well as real-time information from weather satellites. Can you please provide your assurances that the Commission will incorporate external scientific expertise (*that is not available within FCC*) for future decisions?
- What changes would you recommend to the FCC process to ensure that there are not unintended consequences to the well-being of Americans and businesses?
- How would you work to ensure that the FCC receives the advice of the scientific community when proceedings in front of the FCC have a direct impact on the scientific community?

The decisions noted above indicate the FCC has an unfortunate history of permitting spectrum allocation auctions to proceed without first identifying potential harms to current users, and in particular users of critical scientific data systems. We are concerned the recent FCC decisions noted above stand as stark examples of where the FCC has appeared to side with telecommunication interests rather than with Earth science concerns. We hope you will thoroughly question the FCC chair nominee about these important scientific issues to ensure no further decisions are made with the potential for severe consequences for the public.

We look forward to working with the Committee as well as the FCC on these critical issues to advance weather forecasting and the larger scientific enterprise.

Sincerely,

American Geophysical Union
American Meteorological Society
American Weather and Climate Industry Association
National Weather Association
University Corporation for Atmospheric Research