

**Remarks of Austin Bonner**  
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Thank you all for that warm welcome. When I was transitioning from the FCC to the White House, Principal Deputy CTO Alex Macgillivray and I agreed on a too-long and redundant title for my new role – Assistant Director of the White House Office of Science and Technology Policy for Spectrum and Telecom Policy – because it would put my top priority right there in my email signature. Spectrum remains the biggest part of my job, and it’s where I want to focus today.

I’m just back from a whirlwind trip to the University of Notre Dame, where Spectrum X and the National Telecommunications and Information Administration invited me to participate in the second public listening session on the National Spectrum Strategy. Today, I want to share with you our focus areas in that public engagement process, where the development of the National Spectrum Strategy is headed, and some other ways we can evolve spectrum policy for the next generation of wireless innovation.

With so many communications policy experts in the room, I hope we can start from the shared assumption that getting spectrum policy right is an essential priority. For those of us who spend a lot of time thinking about this unseen but critical resource, it is not difficult to explain that practically every part of the vision President Biden has laid out for our country has a spectrum-dependent component somewhere down the line. We want lower costs for American families and equity for low-income people who are more likely to rely on their smartphones to get online. We want telemedicine that meets people where they are. We want cutting-edge research to fight climate change and advance forecasting to protect Americans during severe weather. We want national defense systems that are ready when we need them. As OSTP’s director, Dr. Arati Prabhakar, has said, “Practically every part of American life . . . runs on spectrum.”

The stakes are high. The greenfield bands are mostly gone, so virtually every spectrum decision impacts an incumbent user. Consumer demand for spectrum-dependent innovations has exploded. [Cisco](#) predicts that Internet of Things devices will, at a total of 14.7 billion, account for half of all global networked devices by this year. And Americans are expected to have an average of 13.6 devices and connections per person. Last fall, CTIA released its [latest annual survey](#) of key wireless trends. They found two times more growth in mobile traffic in 2021 compared to 2020. For a longer-term perspective, mobile data traffic in 2021 was more than 100 times bigger than it was in 2010 when President Obama signed his first spectrum Presidential Memorandum. Demand for Wi-Fi is just as high. Globally, the number of Wi-Fi hotspots will [grow fourfold](#) in just the years between 2018 and 2023. And consumer use is just one of the factors putting pressure on our spectrum resources. Federal agencies are just as eager as commercial users to take advantage of wireless innovations that will advance their missions. Spectrum is a scarce resource and having lots of innovative options for using it to make people’s lives better is a good problem to have.

So what is the Biden-Harris Administration doing? A few weeks ago, NTIA began seeking comment on a National Spectrum Strategy, including identifying airwaves for more intensive use and innovative new uses by both the private sector and federal agencies. That process grows out of the Administration’s commitment to ensuring that the U.S. remains the world leader in

wireless technologies, so that our country reaps the economic and security rewards of that innovation.

That commitment requires us to build a pipeline of spectrum that meets the needs of both federal users and the private sector. We see that pipeline as a way to look ahead in meeting the short, medium, and long-term needs of both commercial and federal users. The goal is to identify at least 1,500 megahertz of spectrum to study for potential repurposing – perhaps the most ambitious study goal for NTIA to date – to meet future requirements for non-federal and federal users. The listening sessions have highlighted many candidate bands.

It also calls for long-term planning and unprecedented spectrum access and management through technology development. At OSTP, research and development sit at the center of our endeavors, and we're looking forward to input from researchers on key questions like:

- What innovations and next-generation capabilities for spectrum management models (including both licensed and unlicensed) are being explored today and are expected in the future to expand and improve spectrum access?
- What policies should the National Spectrum Strategy identify to enable development of new and innovative uses of spectrum?
- What role, if any, should the government play in promoting research into, investment in, and development of technological advancements in spectrum management, spectrum dependent technologies, and infrastructure?

NTIA has created a number of ways to get involved, including two public listening sessions and dedicated listening sessions for federal agencies. The listening sessions have already surfaced a wide variety of views and important considerations – and some fascinating, lesser-known spectrum facts. Did you know, for example, that most astronauts hold amateur radio licenses so they can operate the ham radio station on the International Space Stations? There's still time to file written comments, which are due to NTIA next Monday. And, with an admirable optimism about the state of his calendar, the Director of the National Spectrum Strategy, Scott Blake Harris, has offered one-on-one meetings to anyone who'd like to talk directly to NTIA staff about the Strategy.

We recognize that we are not writing on a blank slate. Planning for our wireless future is day-to-day business for NTIA, the FCC, and many Federal spectrum users – as well as important swaths of the telecom industry and the sectors that depends on it. The National Spectrum Strategy RFC is open-ended by design to invite in all of those ideas. I expect we will have a voluminous record to work with, and on behalf of OSTP and my colleagues at the National Economic Council and the National Security Council who care deeply about this process, I want to thank those of you have already contributed.

## II.

In conjunction with the National Spectrum Strategy, there's more we can do to create a sustainable spectrum management process that positions the U.S. for continued wireless leadership for decades to come.

*First*, we are working to institutionalize a trustworthy, predictable process for managing change in spectrum allocations and for resolving disputes. Through my work, I've met with dozens of stakeholders in recent spectrum proceedings. It will not surprise folks in this room that many of

those stakeholders saw some gaps between the way things are supposed to work on paper and what has actually happened. Your concerns have been heard loud and clear.

During this Administration, the FCC and NTIA have already made big strides in this area, particularly in their recent MOU. We often repeat the basic statement that the FCC and NTIA jointly manage our country's spectrum resources in the public interest. But operationalizing that cooperation is both important and not going to happen by accident. In particular, the MOU sets out procedures for regular coordination and for ensuring Federal considerations get to the right place in the process. That is an important signal to the departments and agencies that care deeply about coordination.

We're also maintaining an active interagency process. All stakeholders, including Federal users, need assurance that spectrum decisions will be made in a process that provides them notice and an adequate opportunity to be heard. And all stakeholders need to operate with a high degree of transparency so that all the relevant arguments are on the table when decisions are made.

*Second*, we should be looking for opportunities to strengthen the technical capacity and laboratory resources needed to enhance spectrum research and development. Last year, I spent time at NTIA's Table Mountain Quiet Zone with folks from the Institute for Telecommunications Sciences. As many of you know, ITS is the research and engineering laboratory for NTIA. It also addresses other federal agencies' telecommunications and spectrum research needs via Interagency Agreements, and it engages directly with industry and academia via Cooperative Research and Development Agreements.

Those relationships are incredibly important, particularly for adding capacity, depth, and resources for the many agencies that need reliable spectrum research but aren't in the spectrum management business themselves. And they have real world results. Look at the map of the original Fast Track CBRS exclusion zones compared to where we are today. Solid research and testing made those zones 77 percent smaller, allowing CBRS to benefit millions more people – and make a compelling commercial case.

Expanding capacity at places like ITS and adding new resources can help resolve spectrum disputes in two ways. First, it will help generate trustworthy data and highlight the work of skilled technical interpreters who can help cut through competing claims about interference. Policymakers cannot always follow the science directly to an answer in every dispute – assessing risk and weighing values will almost always be a part of the equation – but a basic set of shared facts is a prerequisite to working together well across agencies and other stakeholders. Second, adding R&D capacity can better position us to take advantage of innovations in spectrum management that create new options for policymakers, such as new sharing modalities.

There are already talented engineers and academics doing this kind of work, and I am hopeful we can learn from their efforts and build on what works. I got to hear about some of those efforts at yesterday's listening session at Notre Dame, and I look forward to reading the detailed comments to come.

*Third*, we should support agencies' work on a common technical manual or handbook for Federal users. During my time at the FCC, I often found myself working through a docket full of technical studies that seemed to talk past each other. There are always going to be parties who disagree about even the most basic study design decisions. But inside the Federal government,

President Biden has charged us with making evidence-based decisions guided by the best available science and data. In [one of his earliest memoranda to the heads of Departments and Agencies](#), the President declared that when “scientific or technological information is considered in policy decisions it should be subjected [to] well-established scientific processes, including peer review where feasible and appropriate.” To advance the goal of evidence-based decision-making and scientific integrity in the area of spectrum policy, we should work toward a compilation of principles, guidelines, accepted technical standards, interference protection criteria, propagation models, and other characteristics that can form the basis for shared assumptions and comparable results.

*Fourth*, we need to build the corps of people who can do this work, inside and outside the Federal government. I have been lucky throughout my career as a telecom lawyer to have access to many talented spectrum professionals who have at key moments generously explained what’s really going on here. As much as we lawyers may wish sometimes that we could conjure up that kind of good guidance on demand, we all know that the expertise it takes to help resolve spectrum disputes comes at the end of a long path of education, training, and mentorship.

Across the Biden-Harris Administration, agencies have recognized that STEM skills are the foundation for discovery and technological innovation. Under the guidance of the National Science and Technology Council (NSTC), agencies are working to ensure lifelong access to high-quality STEM education for all Americans and to position the United States as the global leader in STEM literacy, innovation, and employment. To achieve this objective, their strategy identifies three overarching goals: build strong foundations for STEM literacy; increase diversity, equity and inclusion in STEM; and prepare the STEM workforce for the future.

Those broad STEM efforts will help build a talent pipeline, and I’ve been heartened to see Federal departments and agencies tackle the spectrum management challenge head-on. Many of my colleagues in the Federal spectrum community bring decades of rich experience to the table—and aren’t that far from retiring. We risk losing significant skills, expertise, and hard-earned perspective without a corresponding influx of new talent. To keep up with our nation’s spectrum management challenges, we have to reverse that trend.

NASA is making strides in this area through its Spectrum Education Awareness, or SPEARS, program. SPEARS is educating spectrum users about the roles and requirements in the spectrum management process; training spectrum professionals in the skills needed to lead the workforce into the future; and raising awareness of spectrum work in the broader STEM community. If anyone can make spectrum policy sound cool, it’s NASA. How many of us will get to tell our friends we helped fix the Wi-Fi on the moon?

*Fifth*, we need to reinstate the Federal Communication Commission’s spectrum auction authority. The auction mechanism has proven to be a critical component in ensuring non-Federal spectrum serves its best and highest use. As Chairwoman Rosenworcel has said, “indispensable tool for harnessing the promise of new wireless technologies while also spurring economic growth, creating jobs, and strengthening our national security and global leadership.” Stakeholders must be able to trust the predictability and reliability of that mechanism.

*Finally*, we need strong, values-driven leadership that can cut through institutional conflict, at the highest levels and at every level. When we have a long day, week, or season in spectrum policy, I turn back to my guiding principle in this job: No spectrum policy for its own sake.

I have the good fortune to work somewhere that reminds me every day why it's never been more important to be good at this. At OSTP, my colleagues are military scientists, medical doctors, engineers, AI and many other kinds of experts. I look at their work and see spectrum needs brought to life. And at OSTP it's not all that hard to convince my colleagues that a phenomenon that consists of electromagnetic waves propagating through space is of fundamental economic and social importance.

In the middle of an interference dispute or legislative debate, it can be easy to dig in on one cost or benefit. Usually, the solution we're reaching for requires balancing many competing considerations. As with all the issues we face, President Biden calls on us to keep the focus on our shared values, even when the stakes are high. That kind of leadership is what keeps parties coming back to a reliable space for negotiation – even though there will sometimes be winners and losers – and it can keep spectrum disputes from growing into the institutional conflicts that make future spectrum challenges harder to address.

With those ideas on the table, I would be glad to take your questions.