Let me begin by congratulating each of the CSMAC working groups and working group leaders for preparing the reports. Each working group report represents a substantial effort and extraordinary coordination among a large number of individuals both inside and outside government. Early in the process, I realized that the working groups were focusing on technical engineering issues outside my realm of expertise. I am not in a position to offer an opinion on the technical merits of the reports. I leave the engineering to others.

But I do separately about the economics and broader policy interpretations of the working group reports. I write separately not to undermine the reports but rather to provide a framework to interpret them. As I read them, the CSMAC working group reports answer narrow technical questions that might be framed as: “If commercial users were to use the same spectrum as certain federal users in the 1755-1850 band, how might sharing arrangements between the commercial and federal users work?” That is a useful question. The working groups provide useful answers to how sharing might or might not work with specific federal users. In some, but not all, instances, relocation of federal users is only partially examined and addressed.¹

Many observers, however, are asking entirely different questions. For those entirely different questions, the CSMAC working group reports may not provide useful answers. This gap between the entire range of possible questions and the CSMAC working group reports is not a defect of CSMAC or NTIA or anyone else. Until a few short years ago, any discussion of sharing or relocation of federal users in the 1755-1850 band would have been practically unimaginable. NTIA has pushed CSMAC, and federal agencies, to address some difficult issues. The CSMAC working groups have addressed some of those difficult issues. But not all difficult issues have yet to be asked much less addressed. Let me review just a few of the many questions that the CSMAC working group reports have not addressed.

1. If all of the working group reports were combined together, what would be the resulting exclusion zones, power limits, and other restrictions on sharing? This issue was raised during the last CSMAC meeting, and the answer would be helpful to the overall deliberations on the working group reports.

2. **Is the relocation of federal users entirely out of the 1755-1850 band feasible or not?** The Working Group papers do not focus on relocation as the primary solution. That is a shame. Congress in passing the Spectrum Act of 2012 and President Obama in signing the act into law,

¹ The original request from CSMAC to the working groups appears to focus equally on relocation and sharing rather than sharing alone.
make clear that relocation, not sharing, is the primary purpose. The Spectrum Act of 2012 directed the FCC to allocate and license 65 MHz of spectrum for commercial use by February 2015. Although the Spectrum Act allowed more flexibility for sharing spectrum between federal and commercial users, it codified a strong preference for clearing and reallocating spectrum. Indeed, the National Telecommunications and Information Administration must "give priority" to clearing and reallocation and may pursue a sharing strategy only if, in consultation with the Office of Management and Budget, it determines that "relocation of a Federal entity from the band is not feasible because of technical or cost constraints." I would not want the casual reader—or even the careful reader in other offices of government such as the Federal Communications Commission or Congress—to infer that CSMAC uniformly believes that sharing is the primary means of making commercially available federal spectrum in the 1755-1850 Mhz band. Nor would I want anyone to believe that CSMAC has made a finding that relocation of all federal users in the band is “not feasible because of technical or cost constraints.” We have made no such finding. NTIA recently released a study suggesting that the costs of relocating federal users in the 1755-1850 would be in the many billions of dollars. While some readers might have found the projected relocation costs daunting, others might have seen them as small compared with the commercial value of 95 Mhz at auction or the consumer welfare value of such spectrum.

3. **Which specific federal services can be relocated and which cannot?** The prior question addressed relocating all federal users in the 1755-1850 band. A more modest inquiry might examine whether some federal users could be relocated while others could not. This question has not been directly addressed by CSMAC either. I do not want anyone to believe that CSMAC has made a finding that relocation of even some federal users in the band is “not feasible because of technical or cost constraints.” We have made no such finding.

4. **How much of the 1755-1850 band can be cleared through relocation, and how much cannot?** The CSMAC has not addressed this issue.

5. **How long would it take and how much would it cost to relocate some or all federal users in the 1755-1850 band?** CSMAC has not directly addressed any of these issues.

6. **Can the FCC proceed with plans to auction the 1755-1780 band by the beginning of 2015?** The Spectrum Act of 2012 requires the FCC to auction and license 65 Mhz of spectrum by early 2015. To license spectrum by early 2015 would require an auction by no later than autumn 2014. The FCC has issued an NPRM on auctioning and licensing the 1755-1780 band. The CSMAC working group reports do not directly address this band. Typically, the FCC auctions spectrum licenses for well-defined services, primary rather than secondary in nature, in well-defined geographies in well-defined bands of spectrum. While FCC auctions have been held where spectrum has not yet been completely cleared of licensees needing relocation, a plan has usually been in place for the relocation of incumbent licensees in a matter of years, rather than at most

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3 Spectrum Act 6701(a)(1)(B) (amending section 113(j) of the National Telecommunications and Information Administration Organization Act (47 U.S.C. 923)); see also id. (entitling such subsection "Relocation Prioritized Over Sharing"); Spectrum Act 6401(a) (entitled "Clearing Certain Federal Spectrum").
4 [cite NTIA study]
5 95 Mhz of spectrum represents approximately 31 billion Mhz pops. Current valuations of cleared spectrum in adjacent often exceed $0.50 per Mhz pop. Estimates of annual consumer welfare from spectrum usually are substantially greater than the one-time commercial value of the spectrum.
only a partial relocation with significant incumbent operations remaining in place indefinitely with primary status. A casual reader of the CSMAC working group papers might conclude that the no portion of the 1755-1780 band can be cleared of all incumbent users. But that would be an incorrect inference to draw from the reports, because the question of how to clear the spectrum of federal users was never directly presented to the working groups. The working group reports reveal that sharing would be difficult at best, but the reports do not directly address clearing the spectrum entirely. Thus, the FCC should not interpret the CSMAC working group reports as precluding an auction of 1755-1780—or any other portion of the federal spectrum controlled by NTIA.

7. **How might sharing between federal and commercial users operate in the 1755-1850 band if sharing were the primary or only alternative?** This is the question that the CSMAC working groups have answered. In some cases, sharing would work; in some cases, it would not.

The United States is mired in a sluggish economy. Unemployment is high. Economic growth is slow at best; in some parts of America, economic growth is not even apparent. Wireless innovation and services have been one of the few areas of measurable economic growth in the past two decades. If we are nearing the end of wireless innovation and growth, then decisions about future uses of federal spectrum may make little difference in the future economic growth of America and our people.

But if we are at the beginning rather than the end of the wireless revolution, then the decisions made today about the future of spectrum in America matter not just for the wireless sector of America but for the American economy as a whole. Decisions made decades ago about the allocation of spectrum in the United States may not necessarily be efficient today, much less tomorrow. One of America’s challenges is to find a more efficient and technologically responsive way to assign rights to spectrum.

The CSMAC has addressed some but not all of the issues pertaining to how to assign rights to spectrum, particularly from a federal perspective. Readers of the CSMAC working group reports should read them for the specific issues they address, particularly regarding sharing. But readers should not read into the CSMAC working group reports answers to questions they did not directly address. Others may address those questions. Or CSMAC itself may return to answer some of the remaining questions.