

GAO Highlights

Highlights of [GAO-13-472](#), a report to the Committee on Armed Services, U.S. Senate

Why GAO Did This Study

Allocating radio-frequency spectrum is a challenging task because of competing commercial and government demands. In 2006, FCC auctioned spectrum licenses in the 1710-1755 MHz band that had previously been allocated for federal use. To meet the continued demand for commercial wireless services, NTIA assessed the viability of reallocating the 1755-1850 MHz band to commercial use; this band is currently assigned to more than 20 federal users, including DOD. In March 2012, NTIA reported that it would cost \$18 billion over 10 years to relocate most federal operations from the band, raising questions about whether relocating federal users is a sustainable approach.

GAO was directed to review the costs to relocate federal spectrum users and revenues from spectrum auctions. This report addresses (1) estimated and actual relocation costs, and revenue from the previously auctioned 1710-1755 MHz band; (2) the extent to which DOD followed best practices to prepare its preliminary cost estimate for vacating the 1755-1850 MHz band; and (3) existing government or industry forecasts for revenue from an auction of the 1755-1850 MHz band. GAO reviewed relevant reports; interviewed DOD, FCC, NTIA, and OMB officials and industry stakeholders; and analyzed the extent to which DOD's preliminary cost estimate met best practices as identified in GAO's *Cost Estimating and Assessment Guide (Cost Guide)*. FCC agreed with the report's findings and DOD, FCC, and NTIA provided technical comments that were incorporated as appropriate.

View [GAO-13-472](#). For more information, contact Mark L. Goldstein at (202) 512-2834 or goldsteinm@gao.gov.

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SPECTRUM MANAGEMENT

Federal Relocation Costs and Auction Revenues

What GAO Found

Some federal agencies underestimated the costs to relocate communication systems from the 1710-1755 megahertz (MHz) band, although auction revenues appear to exceed relocation costs by over \$5 billion. As of March 2013, actual relocation costs have exceeded estimated costs by about \$474 million, or 47 percent. The National Telecommunications and Information Administration (NTIA) expects agencies to complete the relocation effort between 2013 and 2017, with a final relocation cost of about \$1.5 billion. Actual relocation costs have exceeded estimated costs for various reasons, including unforeseen challenges and some agencies not following NTIA's guidance for developing cost estimates. However, the Department of Defense (DOD) expects to complete its relocation for about \$71 million less than its estimate of about \$355 million. NTIA and the Office of Management and Budget (OMB) are taking steps to ensure that agencies improve their cost estimates by, for example, preparing a cost estimation template and guidelines for reporting reimbursable costs. The auction of spectrum licenses in the 1710-1755 MHz band raised almost \$6.9 billion.

DOD's preliminary cost estimate for relocating systems out of the 1755-1850 MHz band substantially or partially met GAO's best practices for cost estimates, but changes in key assumptions may affect future costs. Adherence with GAO's *Cost Guide* reduces the risk of cost overruns and missed deadlines. GAO found that DOD's preliminary estimate of \$12.6 billion substantially met the comprehensive and well-documented best practices. For instance, it included complete information about systems' life cycles, and the baseline data were consistent with the estimate. However, GAO found that some information on the tasks required to relocate some systems was incomplete. GAO also determined that DOD's estimate partially met the accurate and credible best practices. For example, DOD applied appropriate inflation rates and made no apparent calculation errors. However, DOD did not complete some sensitivity analyses and risk assessments at the program level, and not at all at the summary level. DOD officials said that changes to key assumptions could substantially change relocation costs. Most importantly, decisions about which spectrum band DOD would relocate to are still unresolved, and relocation costs vary depending on the proximity to the 1755-1850 MHz band. Nevertheless, DOD's preliminary cost estimate was consistent with its purpose—informing the decision-making process to make additional spectrum available for commercial wireless services.

No government revenue forecast has been prepared for a potential auction of the 1755-1850 MHz band, and a variety of factors could influence auction revenues. One private sector study in 2011 forecasted \$19.4 billion in auction revenue for the band, assuming that federal users would be cleared and the nationwide spectrum price from a previous auction, adjusted for inflation, would apply to this spectrum. Like for all goods, the price of spectrum, and ultimately the auction revenue, is determined by supply and demand. The Federal Communications Commission (FCC) and NTIA jointly influence the amount of spectrum allocated to federal and nonfederal users (the supply). The potential profitability of a spectrum license influences its demand. Several factors would influence profitability and demand, including whether the spectrum is cleared of federal users or must be shared.