

Calendar No. 17

115TH CONGRESS }
1st Session }

SENATE

{ REPORT
115-4

MAKING OPPORTUNITIES FOR BROADBAND
INVESTMENT AND LIMITING EXCESSIVE
AND NEEDLESS OBSTACLES TO WIRELESS
ACT

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 19



MARCH 21, 2017.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED FIFTEENTH CONGRESS

FIRST SESSION

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MAKING OPPORTUNITIES FOR BROADBAND INVESTMENT AND LIMITING EXCESSIVE AND NEEDLESS OBSTACLES TO WIRELESS ACT

MARCH 21, 2017.—Ordered to be printed

Mr. THUNE, from the Committee on Commerce, Science, and
Transportation, submitted the following

R E P O R T

[To accompany S. 19]

[Including cost estimate of the Congressional Budget Office]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 19) to provide opportunities for broadband investment, and for other purposes, having considered the same, reports favorably thereon with an amendment (in the nature of a substitute) and recommends that the bill (as amended) do pass.

PURPOSE OF THE BILL

The purpose of S. 19, the Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless Act (MOBILE NOW Act), is to help secure continued U.S. mobile and fixed broadband leadership by ensuring additional licensed and unlicensed spectrum are made available for wireless broadband use, by reducing barriers to investment and innovation, and by facilitating deployment of broadband services, especially in rural areas, and for other purposes.

BACKGROUND AND NEEDS

“High-speed broadband enables Americans to use the Internet in new ways, expands access to health services and education, increases the productivity of businesses, and drives innovation

throughout the digital ecosystem.”¹ Wireless services and connectivity have transformed American daily life – changing everything from the way we work to the way we relax – and have become an essential part of the Nation’s infrastructure. Last year 198.5 million people in the United States owned smartphones,² and smartphones comprised at least 77 percent of the traffic on wireless networks.³ Americans access the Internet on mobile devices more often than on computers,⁴ and the number of American adults who rely solely on their smartphones for Internet access at home is increasing – as of 2015, 13 percent of adults were “smartphone-only,” with no home broadband subscription.⁵

As President Obama noted in 2010, “America’s future competitiveness and global technology leadership depend, in part, upon the availability of additional spectrum. The world is going wireless, and we must not fall behind.”⁶ In particular, next-generation gigabit wireless networks, including fifth generation (5G) mobile technologies, “will be a revolutionary leap forward in wireless capability that will reshape the world around us and fundamentally change how we interact with that world.”⁷ The benefits of leading the world in the development of a gigabit wireless future can only be secured if the country acts now to identify the spectrum and facilitate the deployment of the infrastructure on which technologies like 5G will depend; the higher frequencies on which 5G and other gigabit wireless systems will in part be deployed will require increased spectral efficiency and much greater density of cell deployment than current cell technology.⁸

In addition to facilitating the way that most Americans communicate, wireless spectrum is a major economic driver. Spectrum licensed to U.S. wireless carriers generates more than \$400 billion annually in economic activity, and wireless technologies also enable other sectors of the economy; for instance, mobile entertainment generated an estimated \$9 billion in revenues in 2014, and it has been estimated that the U.S. telehealth market will grow from \$240 million in revenues in 2013 to \$1.9 billion by 2018.⁹

¹ President Barack Obama, “Presidential Memorandum-Expanding Broadband Deployment and Adoption by Addressing Regulatory Barriers and Encouraging Investment and Training,” March 23, 2015, at <https://obamawhitehouse.archives.gov/the-press-office/2015/03/23/presidential-memorandum-expanding-broadband-deployment-and-adoption-addr>.

² “comScore Reports January 2016 U.S. Smartphone Subscriber Market Share,” comScore, March 4, 2016, at <http://www.comscore.com/Insights/Rankings/comScore-Reports-January-2016-US-Smartphone-Subscriber-Market-Share>.

³ *INFOGRAPHIC: Smartphones Comprise 77 Percent of Traffic on Wireless Networks*, Cellular Telecommunications Information Agency (CTIA), June 26, 2015, at <http://www.ctia.org/resource-library/facts-and-infographics/archive/infographic-smartphones-comprise-77-percent-of-traffic-on-wireless-networks>; see also VNI Mobile Forecast Highlights, 2015-2020, Cisco, at http://www.cisco.com/assets/sol/sp/vni/forecast_highlights_mobile/index.html.

⁴ Kleiner Perkins Caufield & Bayers (KPCB), “KPCB Internet Trends 2015,” May 27, 2015, at <http://www.kpcb.com/file/kpcb-internet-trends-2015>.

⁵ John Horrigan and Maev Duggan, Home Broadband 2015, Pew Research Center Dec. 21, 2015, at <http://www.pewinternet.org/2015/12/21/1-home-broadband-adoption-modest-decline-from-2013-to-2015/>.

⁶ Unleashing the Wireless Broadband Revolution, Presidential Memorandum, June 28, 2010, 75 FR 38387.

⁷ Remarks of Chairman John Thune, February 9, 2016, at <http://www.commerce.senate.gov/public/index.cfm/speeches?ID=016478D3-0C39-4D7C-B65E-CE422C335E4>.

⁸ See, e.g., Use of Spectrum Bands Above 24 GHz for Mobile Radio Services, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Received (Rd.) 8014, 8053, FCC 16-89, para. 96.

⁹ Coleman Bazelon and Giulia McHenry, *Mobile Broadband Spectrum: A Vital Resource for the U.S. Economy*, The Brattle Group, 2, May 11, 2015, at http://www.ctia.org/docs/default-source/default-document-library/brattle_spectrum_051115.pdf.

Despite extraordinary innovation and investment in wired and wireless broadband, an estimated \$1.5 trillion since 1996,¹⁰ the Federal Communications Commission (FCC or Commission) has found that advanced telecommunications capability is not being deployed to all Americans in a reasonable and timely fashion and that there is “a significant disparity of access to advanced telecommunications capability across America with more than 39 percent of Americans living in rural areas lacking access to advanced telecommunications capability, as compared to 4 percent of Americans living in urban areas, and approximately 41 percent of Americans living on tribal lands lacking access to advanced telecommunications capability.”¹¹

On June 28, 2010, President Obama issued a Presidential Memorandum establishing a goal of making a total of 500 megahertz of spectrum available by 2020 for both mobile and fixed wireless broadband use,¹² and Congress has already taken several steps consistent with that goal. In sections 6401 and 6403 of the Middle Class Tax Relief and Job Creation Act of 2012, Congress did the following: (i) directed the Commission and the National Telecommunications and Information Administration (NTIA) to identify, reallocate, auction, and license certain spectrum for commercial Advanced Wireless Services use;¹³ and (ii) directed the Commission to conduct an incentive auction of broadcast television spectrum in which broadcast television licensees could voluntarily relinquish their spectrum usage rights in order to permit the assignment by auction of new flexible-use licenses.¹⁴ Further, in the Bipartisan Budget Act of 2015, Congress directed the NTIA and the Commission to identify, reallocate from Federal use to non-Federal or shared Federal and non-Federal use, and auction 30 megahertz of spectrum.¹⁵

However, more spectrum is needed to meet the 500 megahertz goal set forth by the previous President and the expanding requirements of our wireless ecosystem. Increasing use of data-intensive applications, such as video and Internet access, has created additional demand for carrier networks, and this demand for spectrum is already outpacing availability. Cisco reports that, between 2015 and 2020, U.S. mobile data traffic will grow six-fold, twice as fast as U.S. fixed IP traffic, and the number of connected devices in personal, household, or commercial settings will nearly double.¹⁶ Even taking into account the spectrum the Commission is newly making available, the United States is facing a significant projected spectrum deficit. To meet America’s demand for mobile broadband, the wireless industry will need more than 350 megahertz of new li-

¹⁰U.S. Telecom, “Broadband Investment,” at <https://www.ustelecom.org/broadband-industry/broadband-industry-stats/investment>.

¹¹Federal Communications Commission (FCC) 16-6, paragraph 4.

¹²President Barack Obama, “Presidential Memorandum-Unleashing the Wireless Broadband Revolution,” Presidential Memorandum, June 28, 2010, at <https://obamawhitehouse.archives.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution>.

¹³Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112–96, 126 Stat. 156, 222 (2012) (47 U.S.C. §1451).

¹⁴Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112–96, 126 Stat. 156, 225 (2012) (47 U.S.C. §1452).

¹⁵Bipartisan Budget Act of 2015, Pub. L. 114–974, 129 Stat. 585, §§ 1001-1008.

¹⁶Cisco Visual Networking Index Mobile Forecast (2015-2020), *United States – 2020 Forecast Highlights*, at http://www.cisco.com/c/dam/m/en_us/solutions/service-provider/vni-forecast-highlights/pdf/United_States_2020_Forecast_Highlights.pdf.

censed spectrum alone by 2019.¹⁷ The MOBILE NOW Act would build upon Congress' past efforts by ensuring that additional capacity is available to meet Americans' needs and to allow the wireless sector to continue to be a critical economic stimulant for the entire economy.

Moreover, a thriving wireless broadband environment requires both licensed and unlicensed spectrum. Deploying a wireless network is a lengthy, resource-intensive process, and licensed spectrum helps guarantee reliable service and encourages greater investment and technical innovation by providing carriers with needed certainty. Similarly, unlicensed spectrum guarantees industries and entrepreneurs the spectrum they need for the advancement of unlicensed services and technologies. Both are necessary to support the growing wireless ecosystem, and the MOBILE NOW Act would require that the Commission will satisfy requirements for both. Specifically, the MOBILE NOW Act would require the Commission to designate at least 100 megahertz of the newly available spectrum for licensed use and at least 100 megahertz for unlicensed use.

The time to act is now. It can take years to identify spectrum that can be made available for commercial use, allocate the spectrum, create service rules, develop auction rules for spectrum to be auctioned, conduct an auction, and relocate incumbent operations, all before beginning to deploy the networks providing service to American consumers. The NTIA estimated that it would take 10 years and cost \$18 billion to clear and repurpose 95 megahertz of spectrum in the 1755 to 1850 megahertz band.¹⁸ Much of this process must be undertaken before industry can have the reasonable certainty that is necessary to undertake massive investment in new technology. A case in point: as noted above, Congress in 2012 authorized the Commission to conduct an incentive auction of broadcast television spectrum in which broadcast television licensees could voluntarily relinquish their spectrum usage rights in order to permit the assignment by auction of new flexible-use licenses. The Commission did not have final rules for the admittedly complex auction of that spectrum until July 2015, and as of the date of this bill's committee consideration, the Commission had not yet completed the auction of the spectrum or begun the 39-month transition and spectrum repacking process to make the spectrum available for flexible use.¹⁹

In order to facilitate deployment of both fixed and mobile networks, the MOBILE NOW Act would address a number of barriers to deployment. At the Committee's October 7, 2015, hearing on "Removing Barriers to Wireless Broadband Deployment," witnesses identified a number of steps Congress could take to enable faster and more efficient deployment of advanced telecommunications services. Noting "[t]he myriad of processes and procedures among

¹⁷ Coleman Bazelon and Giulia McHenry, *Substantial Licensed Spectrum Deficit (2015-2019): Updating the FCC's Mobile Data Demand Projections*, The Brattle Group, 1, May 11, 2015, at [http://www.brattle.com/system/news/pdfs/000/000/891/original/Substantial_Licensed_Spectrum_Deficit_\(2015-2019\)_-Updating_the_FCC's_Mobile_Data_Demand_Projections.pdf?1435613076](http://www.brattle.com/system/news/pdfs/000/000/891/original/Substantial_Licensed_Spectrum_Deficit_(2015-2019)_-Updating_the_FCC's_Mobile_Data_Demand_Projections.pdf?1435613076).

¹⁸ U.S. Department of Commerce, *An Assessment of the Viability of Accommodating Wireless Broadband in the 1755 – 1850 MHz Band*, March, 2012, at iv, at https://www.ntia.doc.gov/files/ntia/publications/ntia_1755_1850_mhz_report_march2012.pdf.

¹⁹ See *Transition Broadcasters After the Auctions*, at <https://www.fcc.gov/about-fcc/fcc-initiatives/incentive-auctions/post-auction-transition>.

different [F]ederal agencies often poses insurmountable obstacles to siting wireless infrastructure on [F]ederal property,”²⁰ witnesses recommended requiring agencies to do the following: use master templates;²¹ streamline disparate agency processes;²² establish a shot-clock for Federal agency consideration of leases;²³ establish “dig-once” procedures to reduce the cost and disruption of deployments;²⁴ and establish a database of key information regarding Federal properties, with appropriate protections for national security.²⁵ The MOBILE NOW Act would address each of these matters.

The MOBILE NOW Act is an essential first step in making more spectrum available and promoting more deployment of broadband infrastructure, both of which are necessary to secure American leadership for the next generation of communications technologies like 5G and other gigabit wireless services.

SUMMARY OF PROVISIONS

To facilitate deployment of advanced telecommunications capability, the MOBILE NOW Act would make more spectrum available for fixed and mobile broadband and would facilitate deployment of the infrastructure essential for the future of advanced telecommunications capability.

The MOBILE NOW Act would do the following, among other things:

- Require that 255 megahertz of spectrum be made available for fixed and mobile wireless broadband use by 2020. At least 100 megahertz would be available on an unlicensed basis, and at least 100 megahertz on an exclusive, licensed basis.
- Direct the NTIA to study the impact of allowing fixed or mobile operations in certain spectrum bands with existing Federal users, and subsequently direct the FCC to publish a notice of proposed

²⁰Testimony of Hon. Jonathan S. Adelstein, President & CEO, PCIA – The Wireless Infrastructure Association, Senate Committee on Commerce, Science, and Transportation, “Removing Barriers to Wireless Broadband Deployment,” October 7, 2015, at <https://www.commerce.senate.gov/public/cache/files/776a69e3-5891-476f-85fb-945ba3ed518a/56E37595DFA44623573E920E7E04A421.adelstein-qfr-responses.pdf>.

²¹Testimony of Mr. Douglas Kinkopf, Associate Administrator, Office of Telecommunications and Information Applications, National Telecommunications and Information Administration (NTIA), Senate Committee on Commerce, Science, and Transportation, “Removing Barriers to Wireless Broadband Deployment,” October 7, 2015, at <https://www.commerce.senate.gov/public/cache/files/776a69e3-5891-476f-85fb-945ba3ed518a/56E37595DFA44623573E920E7E04A421.adelstein-qfr-responses.pdf>.

²²Testimony of Mr. Bruce Morrison, Vice President, Operations and Network Build, Region North America, Ericsson, Senate Committee on Commerce, Science, and Transportation, “Removing Barriers to Wireless Broadband Deployment,” October 7, 2015, at <http://www.commerce.senate.gov/public/index.cfm/hearings?ID=D7B621C5-BEB5-418D-B814-AEBFF10FFC21>.

²³Ibid. See also Testimony of Hon. Gary Resnick, Mayor of Wilton Manors, Florida, Senate Committee on Commerce, Science, and Transportation, “Removing Barriers to Wireless Broadband Deployment,” October 7, 2015, at <http://www.commerce.senate.gov/public/index.cfm/hearings?ID=D7B621C5-BEB5-418D-B814-AEBFF10FFC21>.

²⁴Testimony of Hon. Jonathan S. Adelstein, President & CEO, PCIA – The Wireless Infrastructure Association, Senate Committee on Commerce, Science, and Transportation, “Removing Barriers to Wireless Broadband Deployment,” October 7, 2015, at <http://www.commerce.senate.gov/public/index.cfm/hearings?ID=D7B621C5-BEB5-418D-B814-AEBFF10FFC21>.

²⁵Testimony of Mr. Douglas Kinkopf, Associate Administrator, Office of Telecommunications and Information Applications, NTIA, Senate Committee on Commerce, Science, and Transportation, “Removing Barriers to Wireless Broadband Deployment,” October 7, 2015, at <http://www.commerce.senate.gov/public/index.cfm/hearings?ID=D7B621C5-BEB5-418D-B814-AEBFF10FFC21>.

rulemaking regarding service rules for mobile or fixed wireless operation in those bands, if feasible, and in additional bands.

- Require the Secretary of Commerce (Secretary) to evaluate and report to Congress on the feasibility of allowing commercial wireless services in the spectrum band between 3100 and 3500 megahertz, and require the Commission to do the same regarding the spectrum band between 3700 to 4200 megahertz.
- Streamline the process of applying for easements, rights of way, and leases for federally-managed property.
- Establish a National Broadband Facilities Asset Database of Federal property, and make the database available to entities that construct or operate communications facilities. States would be encouraged to include State information in the database as well.
- Direct the Secretary to prepare a report of legislative and regulatory proposals, including use of the auction proceeds, to provide incentives to Federal entities to relinquish or share spectrum with Federal and non-Federal users.
- Require the FCC to study the best means of providing Federal entities intermittent access to non-Federal spectrum, for example during emergencies.
- Require the FCC to adopt rules regarding unlicensed operations in designated guard bands.
- Require the FCC to conduct a rulemaking regarding the partitioning and disaggregation of spectrum licenses, and other measures to promote availability of advanced telecommunications services in rural areas.
- Require the FCC to develop a national plan for making additional radio frequency bands available for unlicensed operations.

LEGISLATIVE HISTORY

S. 19, the MOBILE NOW Act was introduced on January 3, 2017, by Senator Thune and Senator Nelson and was referred to the Committee on Commerce, Science, and Transportation of the Senate. On January 24, 2017, the Committee met in open Executive Session and, by voice vote, ordered S. 19 to be reported favorably with an amendment (in the nature of a substitute). A substitute amendment was offered by Senators Thune and Nelson with an amendment by Senator Heller to require that specified NTIA recommendations related to a report required by the underlying bill include a recommendation on policies that would prioritize or streamline a permit for construction in a previously-disturbed right-of-way.

The bill as amended is substantially similar to legislation previously reported favorably by the Committee, S. 2555, in the 114th Congress. On March 3, 2016, the Committee held an Executive Session during which S. 2555 was approved unanimously, by voice vote, and was ordered to be favorably reported with an amendment (in the nature of a substitute).

On July 29, 2015, the Committee held a hearing on “Wireless Broadband and the Future of Spectrum Policy,” during which the Committee received testimony regarding the need to provide incentives to free more spectrum for commercial use and the need to assess the suitability of millimeter wave spectrum. On October 7, 2015, the Committee held a hearing on “Removing Barriers to Wireless Broadband Deployment,” during which the Committee re-

ceived testimony regarding the importance of fixed and mobile wireless service to the U.S. economy, the need for additional spectrum to meet consumer demand, the need to streamline the process for deploying and densifying wireless networks, the technology gap facing rural America, and the role of local governments in deployment of wireless infrastructure.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

S. 19—Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless Act

Summary: S. 19 would authorize federal agencies to implement various programs and measures related to management of the electromagnetic spectrum. It would direct federal agencies to prepare reports, develop information for firms that provide telecommunications services, award prizes for advanced technologies, and ensure that certain radio frequencies are made available for commercial uses.

CBO estimates that enacting S. 19 would increase net direct spending by \$141 million over the 2018–2027 period, primarily as a result of provisions that would accelerate spending related to making federal spectrum available for commercial use. CBO also estimates that implementing the bill would cost \$88 million over the 2018–2022 period, subject to the appropriation of the necessary amounts, mainly to develop new data systems and carry out spectrum management activities.

Because enacting the bill would affect direct spending, pay-as-you-go procedures apply. Enacting S. 19 would not affect revenues.

CBO estimates that enacting the legislation would not increase net direct spending or on-budget deficits by more than \$5 billion in any of the four consecutive 10-year periods beginning in 2028.

S. 19 would impose intergovernmental mandates as defined in the Unfunded Mandate Reform Act (UMRA) by preempting state and local tax laws related to wireless telecommunication services and by preempting the jurisdiction of state and local courts in some cases. CBO estimates that the costs of the mandates, mostly in the form of foregone revenue to state and local governments, would not exceed the threshold established in UMRA (\$78 million in 2017, adjusted annually for inflation).

If the Federal Communications Commission (FCC) increases annual fee collections to offset the costs of implementing the bill, doing so would increase the cost of an existing private-sector mandate on some commercial entities regulated by the agency. Based on information from the FCC, CBO estimates that the incremental cost of the mandate would be small, and fall well below the annual threshold established in UMRA for private-sector mandates (\$156 million in 2017, adjusted annually for inflation).

Estimated cost to the Federal Government: The estimated budgetary effect of S. 19 is shown in the following table. The costs of this legislation fall within several budget functions, including 370 (commerce and housing credit) and 800 (general government).

	By fiscal year, in millions of dollars—											
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2018–2022	2018–2027
INCREASES IN DIRECT SPENDING												
Estimated Budget Authority	8	8	8	11	8	4	2	57	35	0	66	141
Estimated Outlays	8	8	8	11	8	4	2	57	35	0	43	141
INCREASES IN SPENDING SUBJECT TO APPROPRIATION												
Estimated Authorization Level	8	29	25	24	23	3	3	4	4	4	109	127
Estimated Outlays	7	13	20	25	23	18	9	4	4	4	88	127

Basis of estimate: For this estimate, CBO assumes that the bill will be enacted near the end of fiscal year 2017 and that the estimated amounts will be appropriated each year. Outlay estimates are based on historical spending patterns for the affected programs.

Direct Spending

CBO estimates that enacting S. 19 would increase direct spending by \$141 million over the 2018–2027 period, primarily as a result of provisions that would accelerate spending from the Spectrum Relocation Fund (SRF). Most of those costs would be offset by lower spending after 2027.

Spectrum Relocation Fund. Current law authorizes federal agencies to spend a portion of the proceeds from spectrum auctions, without further appropriation, to cover the costs they incur to make federal frequencies available for new commercial uses. Under current law, such spending cannot begin until after the FCC awards licenses to the winning bidders and deposits the proceeds into the SRF. S. 19 would authorize the Office of Management and Budget to borrow funds from the Treasury immediately after an auction closes and to deposit those amounts in the SRF. Making SRF funds available immediately following the end of a spectrum auction would accelerate spending from the fund. Because major relocation efforts typically take several years to complete, CBO estimates that enacting this provision would shift some outlays that otherwise would have occurred after 2027 into the 2018–2027 period. On balance, CBO estimates that this shift in the timing of outlays would increase net direct spending by \$97 million over the 2018–2027 period, primarily reflecting faster spending for costs associated with an auction that is expected to be completed in 2025.

S. 19 also would allow agencies to spend SRF funds sooner to plan for relocation efforts. Agencies currently may spend a portion of the funds in the SRF to develop relocation plans for auctions that are expected to occur within five years; this bill would authorize that spending to occur for auctions that may be scheduled within eight years. Based on an analysis of information from agencies involved in relocation efforts, CBO estimates that this change would increase net direct spending by about \$20 million over the 2018–2027 period and reduce outlays by corresponding amounts after 2027.

Fees for telecommunications leases. Under current law, fees that agencies charge to grant easements and rights-of-way for siting communications facilities on federal property may only cover the agencies' direct costs related to granting such easements and rights-of-way. Furthermore, those fees may not be spent without

further appropriation. S. 19 would apply those same conditions to leases that are issued for siting private communication facilities on federal property.

The budgetary effects of applying those restrictions to leases would depend on the disposition of leasing proceeds under current law. For example, some agencies are allowed to spend the income from communications leases without further appropriation. CBO expects that reducing the amount collected in those instances would have no net effect on direct spending (because the loss of receipts would be offset by lower spending) but would increase costs needing to be covered by appropriations. By contrast, reducing fees that currently cannot be spent without further appropriation would reduce the amount of income that otherwise would have been deposited in the Treasury as offsetting receipts (which are recorded in the budget as reductions in direct spending).

CBO estimates that enacting this provision would primarily affect leasing fees deposited in the Federal Buildings Fund (FBF) by the General Services Administration (GSA), which may be spent only as provided in appropriation acts. According to GSA, the agency deposited \$2 million and \$3 million from communications leases into the FBF in 2014 and 2015, respectively. Based on an analysis of the value of fees charged for cost recovery by other agencies for granting telecommunications rights-of-ways and easements, CBO estimates that proceeds from GSA's new and renewed leases would be at least 90 percent lower than the market-based fees for leases collected under current law. In addition, CBO anticipates that such fees would be paid once, at the time of application, whereas leasing fees are paid annually over the life of the lease, which may be in effect for up to 20 years. On balance, CBO estimates that implementing this change would reduce net offsetting receipts (which increase direct spending) by \$24 million over the 2018–2027 period.

Other provisions. CBO estimates that other provisions in the bill would have no significant net effect on direct spending. For example, S. 19 would direct the FCC and NTIA to make 255 megahertz of spectrum available for new commercial uses by 2020 on a licensed and unlicensed basis. CBO estimates that those requirements would have no significant net effect on projected proceeds from the FCC's auctions because CBO anticipates that the FCC would auction licenses to use similar amounts of spectrum under its existing auction authority.

Spending subject to appropriation

CBO estimates that implementing S. 19 would cost \$88 million over the 2018–2022 period, assuming appropriation of the necessary amounts. That estimate is net of fees that would be collected by the FCC to offset the agency's administrative costs under the bill.

Database of Federal property for telecommunications uses. Under S. 19, the Office of Science and Technology Policy (OSTP) would be required to establish a single database of information about federal real property that could be used as sites for telecommunications equipment owned and operated by nonfederal entities. Subject to certain restrictions, the database would be available to firms that construct or operate such facilities as well as to firms that provide communication services. The bill would direct OSTP to include any

data provided voluntarily by state or local governments related to the availability of real property under their purview that could be used as sites for such equipment.

The federal government currently maintains extensive information on its real property holdings—which include nearly 39 million acres of land and more than 275,000 buildings—but those databases do not indicate whether those properties would be appropriate sites for telecommunications equipment. CBO anticipates that more than 20 federal agencies would need to review the suitability of their property holdings for this purpose, which may involve assessing environmental and historic features as well as considering national security and public safety.

The cost to prepare such an inventory would vary significantly depending on the level of detail included. Based on an analysis of information from affected agencies and the cost of creating other federal databases, CBO estimates that preparing this data would cost those federal agencies \$58 million over the 2018–2022 period, an average of about \$4 million per agency over a four year period. In addition, CBO estimates that creating and maintaining the database would cost about \$3 million annually. Thus, CBO estimates that the cost of implementing this effort would total \$74 million over the 2018–2022 period, assuming appropriation of the necessary amounts. Those costs could be higher if OSTP integrates information from state and local governments; alternatively, costs could be lower if agencies do less analysis of the suitability of specific properties for private communications equipment.

Spectrum management. S. 19 would direct the National Telecommunications and Information Administration (NTIA) and the FCC to conduct various studies and regulatory proceedings related to radio frequencies that may become available in the future for new uses. For example, the bill would require NTIA to study whether certain spectrum bands currently used by federal agencies could be used by nonfederal entities. Following that report, the FCC would need to undertake a rulemaking process on the possibility of reallocating those and other frequencies for new commercial uses. In addition, both agencies would be required to assist OSTP in developing the database of federal property and to develop plans for making spectrum available on either a licensed or an unlicensed basis.¹

Based on an analysis of information from those agencies, CBO estimates that the spectrum management activities required by the bill would cost the NTIA \$8 million over the 2018–2022 period. Implementing the bill also would cost the FCC \$6 million over the 2018–2022 period. However, under current law the FCC is authorized to collect fees sufficient to offset the cost of its regulatory activities each year; therefore, CBO estimates that the net effect on discretionary spending for those activities would be negligible, assuming appropriation actions consistent with that authority.

Technology prize. S. 19 would establish a prize competition aimed at spurring the commercialization of more efficient and cost-effective technologies for using the electromagnetic spectrum. The

¹The FCC awards most licenses to use the electromagnetic spectrum through competitive auctions. Those licenses give entities an exclusive right to use specific frequencies, subject to certain conditions. Spectrum made available on an unlicensed basis usually is available to any user, subject to restrictions aimed at preventing interference with other users.

competition would be administered by the Secretary of Commerce in collaboration with other federal agencies. The bill would authorize the appropriation of \$5 million for prize awards and such sums as may be necessary to administer the program. Based on the historical costs of administering other federal prize competitions, CBO estimates that implementing this program would cost a total of \$6 million, assuming appropriation of the necessary amounts.

Pay-As-You-Go considerations: The Statutory Pay-As-You-Go Act of 2010 establishes budget-reporting and enforcement procedures for legislation affecting direct spending or revenues. The net changes in outlays that are subject to those pay-as-you-go procedures are shown in the following table.

	By fiscal year, in millions of dollars—												
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2017– 2022	2017– 2027
	NET INCREASE IN THE DEFICIT												
Statutory Pay-As-You-Go Impact	0	8	8	8	11	8	4	2	57	35	0	43	141

Increase in long-term direct spending and deficits: CBO estimates that enacting the legislation would not increase net direct spending or on-budget deficits by more than \$5 billion in any of the four consecutive 10-year periods beginning in 2028.

Estimated impact on state, local, and tribal governments: S. 19 would impose intergovernmental mandates as defined in UMRA by preempting state and local tax laws related to wireless telecommunication services. The language of section 20 is circular in nature and consequently it is difficult to clearly determine when state or local taxing authority would be allowed and when it would be preempted. For the purposes of this estimate, CBO has assumed that the bill would prohibit state and local governments from collecting taxes on telecommunication services that are bundled with prepaid phones (or sold subsequently to reload wireless minutes) unless those taxes are levied on the retail seller of the prepaid phone or minutes. For instance, a state could not collect taxes from the company that provides minutes for a prepaid phone if those minutes are sold by a separate retailer that does not provide the minutes directly to the user; instead, the state would need to collect the tax from the retailer.

Most states that levy telecommunications taxes on the sale of prepaid phones or minutes collect the taxes from retailers. CBO could identify only two states with laws that would allow taxes to be collected for prepaid wireless minutes from telecommunication providers that did not sell the phones directly. The revenues those states collect from such transactions total about \$7.5 million annually. While such taxes would clearly be prohibited by section 20, the language in the bill is written generally and is not explicitly limited to the taxation of telecommunication services associated with prepaid phones. Even so, CBO could identify no other likely case in which section 20 would prohibit the collection of state taxes. Consequently, CBO estimates that the cost to state and local governments in the form of forgone revenues would fall well below the threshold established in UMRA (\$78 million in 2017, adjusted annually for inflation). The bill also would preempt the authority of state and local courts to assert jurisdiction in cases that involve

such taxation. That preemption also would be a mandate as defined in UMRA, but it would impose no significant costs in and of itself.

Finally, the bill would require states that receive federal highway aid to meet new requirements to facilitate the installation of broadband infrastructure. Such requirements would be conditions of assistance and thus not intergovernmental mandates as defined in UMRA.

Estimated impact on the private sector: If the FCC increases annual fee collections to offset the costs of implementing the bill, doing so would increase the cost of an existing private-sector mandate on some commercial entities regulated by the agency. The FCC is authorized to collect fees sufficient to offset its regulatory costs each year, subject to its annual appropriation. Based on information from the FCC, CBO estimates that the incremental cost of the mandate would be small—no more than about \$6 million over the 2017–2021 period—and fall well below the annual threshold established in UMRA for private-sector mandates (\$156 million in 2017, adjusted annually for inflation).

Estimate prepared by: Federal Costs: Stephen Rabent (FCC, NTIA) and Kathleen Gramp (spectrum relocation); Impact on State, Local, and Tribal Governments: Rachel Austin; Impact on the Private Sector: Logan Smith.

Estimate approved by: H. Samuel Papenfuss, Deputy Assistant Director for Budget Analysis.

REGULATORY IMPACT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

NUMBER OF PERSONS COVERED

States and local jurisdictions would be covered by the bill's provision dealing with the collection of taxes, fees, or surcharges related to wireless telecommunications services. Otherwise, the number of persons covered by this legislation would be consistent with current levels.

ECONOMIC IMPACT

The legislation would promote more efficient use of spectrum and the efficient deployment of fixed and mobile broadband throughout the United States, allowing the Nation to extend its technology leadership to the next generation of communications technology and extending to more Americans the benefits of advanced telecommunications capability. The legislation would remove barriers to deployment of broadband communications networks and maximize the value of America's spectrum resources for the American consumer in a sector that generates hundreds of billions of dollars of economic activity annually and is responsible for an estimated \$1.5 trillion in network investment since 1996.

PRIVACY

The bill would not have any adverse impact on the personal privacy of individuals.

PAPERWORK

The Committee does not anticipate a major increase in paperwork burdens resulting from the passage of this legislation.

CONGRESSIONALLY DIRECTED SPENDING

In accordance with paragraph 4(b) of rule XLIV of the Standing Rules of the Senate, the Committee provides the following identification of congressionally directed spending items contained in the bill, as reported:

SECTION-BY-SECTION ANALYSIS

Section 1. Short title; table of contents.

This section would provide that the short title of the bill would be “Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless Act” or the “MOBILE NOW Act.” This section would further provide a table of contents for the bill.

Section 2. Definitions.

This section would provide definitions for various terms used throughout the bill.

Section 3. Making 500 megahertz available.

Section 3(a)(1) would direct the Secretary, through the NTIA, and the Commission to make at least 255 additional megahertz of Federal and non-Federal spectrum below the frequency of 6000 megahertz available for mobile and fixed wireless broadband use by December 31, 2020.

By directing the NTIA and the Commission to make spectrum available below 6000 megahertz, the Committee recognizes that technology in those bands is currently the most mature for mobile and fixed deployment and can best be used to meet immediate and medium-term requirements. Lower band spectrum, below 3000 megahertz, is particularly valuable for licensed mobile wireless use because of its propagation characteristics and proximity to other spectrum already being used in licensed commercial mobile networks. The NTIA and the Commission should prioritize that spectrum for mobile wireless use and designate higher band spectrum for shared unlicensed use.

Section 3(a)(2) would provide additional direction to the Commission on how the 255 megahertz of spectrum under section 3(a)(1) should be made available. In particular, section 3(a)(2)(A) would specify that the Commission must make at least 100 megahertz available on an unlicensed basis. Section 3(a)(2)(B) would require the Commission to make 100 megahertz of spectrum available on an exclusive, licensed basis for commercial mobile use, pursuant to the Commission’s authority to implement such licensing in a flexible manner, and subject to potential continued use of such spectrum by incumbent Federal entities in designated geographic areas indefinitely or for such length of time stipulated in transition plans approved by the Technical Panel under section 113(h) of the National Telecommunications and Information Administration Organization Act (47 U.S.C. 923(h)) for those incumbent entities to be

relocated to alternate spectrum. The section would leave to the Commission's discretion, based on its assessment of needs, the designation of the remaining 55 megahertz of spectrum that this section would require the Commission and the Secretary to make available.

The Committee intends that the 100 megahertz of unlicensed spectrum referenced in section 3(a)(2)(A) be available for shared use by non-Federal and Federal users. Unlicensed spectrum can be deployed on a shared basis and can accommodate the type of use contemplated by that section.

By stating that 100 megahertz of spectrum must be made available for exclusive, licensed use, the Committee intends that this spectrum not be generally shared between non-Federal and Federal users. Nevertheless, the Committee recognizes the great success that has been achieved by Federal entities cooperating with winners of the AWS-3 auction. AWS-3 licensees must protect Federal entities in that spectrum, and the Commission has required AWS-3 licensees and Federal entities to work together to share information about their systems, agree to appropriate interference methodologies, and communicate results so as to facilitate commercial use of the band. The Commission and the NTIA have jointly issued guidance for licensees and Federal entities regarding the coordination process.²⁶ Accordingly, section 3(a)(2)(B)(ii) would allow the Commission to replicate the AWS-3 success by allowing incumbent Federal licensees in the 100 megahertz of spectrum available for exclusive, licensed commercial use to continue to operate indefinitely or for as long as specified in the Transition Plan a Federal entity submits in connection with the auction of that spectrum. While that section would recognize the Commission's ability to license exclusive spectrum for commercial use while retaining incumbent Federal operations, the Committee encourages the Secretary and the Commission to, as it has in the AWS-3 spectrum, plan for the ultimate relocation of incumbent Federal operations out of spectrum that has been designated for licensed, exclusive use. Similarly, the Secretary and the Commission should ensure that the designated geographic areas in which incumbent Federal users may continue to operate permit the maximum use possible of the spectrum by licensed, exclusive users.

By stating that the spectrum specified in section 3(a)(2)(B) should be licensed in a flexible manner, the Committee intends that the Commission permit licensees to offer services of their choice, fixed or mobile, consistent with the Commission's Table of Allocations under the regulatory scheme, common carrier or non-common carrier, appropriate to those services. This flexibility is consistent with the Commission's recent approach to licensing mobile wireless spectrum.

The remaining 55 megahertz of spectrum may be available for either licensed exclusive use or shared use, whether on a licensed or unlicensed basis.

Under section 3(a)(3), the Commission and the Secretary would not be permitted to consider the following spectrum in determining which frequencies to make available: (i) the frequencies between

²⁶FCC, NTIA; *The Federal Communications Commission and the National Telecommunications and Information Administration: Coordination Procedures in the 1675-1710 MHz and 1755-1780 MHz Bands*, Public Notice, GN Docket No. 13-185, 10-11 (rel. Jul. 18, 2014).

1695 and 1710 megahertz; (ii) the frequencies between 1755 and 1780 megahertz; (iii) the frequencies between 2155 and 2180 megahertz; (iv) the frequencies between 3550 and 3700 megahertz; and (v) any spectrum that the Commission determines had more than de minimis mobile or fixed wireless broadband operations within the band on the day before the date of enactment of this Act.

The Commission has taken steps in recent years to make more spectrum available for mobile use. The spectrum specified in section 3(a)(3) has either already been auctioned or the Commission has already taken steps to permit its use.²⁷ Thus, to ensure that the Commission and NTIA make available new frequencies, section 3(a)(3) prevents the Commission and the NTIA from considering the spectrum specified above. In addition, section 3(a)(3)(E) clarifies that even where spectrum is not listed in section 3(a)(3)(A)-(D), if the Commission has already permitted the use of that spectrum, it should not be counted toward the 255 megahertz requirement imposed by this section.

Section 3(a)(4) would require that the NTIA, in evaluating frequencies for possible reallocation for exclusive non-Federal use or shared use, give priority to options involving reallocation of the band for exclusive non-Federal use and to choose options involving shared use only when it determines, in consultation with the Director of the Office of Management and Budget (OMB), that relocation of a Federal entity from the band is not feasible because of technical or cost constraints. In addition, if the NTIA determines that relocation of a Federal entity from the band is not feasible, the NTIA must notify the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Energy and Commerce of the House of Representatives of its determination, including the specific technical or cost constraints on which the determination is based.

Section 3(a)(4) would require that the NTIA prioritize relocation over sharing in all instances where relocating incumbent Federal operations is not too costly and is technically feasible by extending Section 113(j) of the National Telecommunications and Information Administration Organization Act (47 U.S.C. 923(j)) to the NTIA's evaluation of spectrum pursuant to S. 19.

Section 3(a)(5) would direct the Secretary and the Commission to consider the following in determining which frequencies to make available: (i) the need to preserve critical existing and planned Federal Government capabilities; (ii) the impact on existing State, local, and tribal government capabilities; (iii) the international implications; (iv) the need for appropriate enforcement mechanisms and authorities; and (v) the importance of the deployment of wireless broadband services in rural areas of the United States.

²⁷ See *Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands, Report and Order*, 29 FCC Rcd. 4610, ¶ 1, 2014, (providing for the auction of spectrum in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz bands – the Advanced Wireless Service, or “AWS-3,” bands); *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band, Report and Order*, 30 FCC Rcd. 3959, ¶¶ 63-64, 72, 2015, (establishing the Citizens Broadband Radio Service in the frequencies between 3550 and 3700 megahertz; providing that a maximum of 70 megahertz of this spectrum will be available on a licensed basis with the licenses assigned via auction, and the remainder will be available on a license-by-rule basis; and providing that where the licensed portion of this spectrum is not being used by licensees, other parties may operate opportunistically on the spectrum on a license-by-rule basis).

Section 3(a)(5) would encourage the Commission and the NTIA to select frequencies that will help increase broadband deployment in rural areas, which may be less likely to have access to high speed Internet. Section 3(a)(5) would further stress that the Commission and the NTIA should consider the international implications of any possible selected frequencies – international harmonization is ideal, as harmonized band plans will minimize interference along the U.S. borders, facilitate international roaming, and reduce development and equipment costs. While international regulatory bodies may take years to consider spectrum that may be best used for mobile wireless services, the Commission and the NTIA need not wait for those efforts to be complete. Instead, to preserve the U.S. leadership position in the wireless industry, the Commission and the NTIA should act in advance of international designations where appropriate.

Section 3(b) would state that the section does not do the following: (i) impair or otherwise affect the functions of the Director of the OMB relating to budgetary, administrative, or legislative proposals; (ii) require the disclosure of classified information, law enforcement sensitive information, or other information that must be protected in the interest of national security; or (iii) affect any existing requirement under section 156 of the National Telecommunications and Information Administration Organization Act (47 U.S.C. 921 note), or any other relevant statutory requirement applicable to the reallocation of Federal spectrum.

Section 4. Millimeter wave spectrum.

This section would direct the NTIA, in consultation with the Commission, to conduct an assessment evaluating the feasibility of allowing mobile or fixed terrestrial wireless operations, including for broadband, in six specified bands between the frequencies of 24 GHz and 86 GHz. This assessment would consider the impact of allowing such services on Federal entities and operations in the identified bands.

This section would further direct the FCC to publish a notice of proposed rulemaking (NPRM) within 2 years of enactment to consider service rules authorizing mobile or fixed terrestrial wireless operations in these millimeter wave spectrum bands. The NPRM would cover any Federal bands identified in the NTIA assessment as being feasible for terrestrial wireless operations along with the bands between the frequencies of 24 GHz and 86 GHz that do not contain Federal allocations.

Section 5. 3 Gigahertz spectrum.

This section would direct the Department of Commerce to submit a report to the President and to Congress within 18 months of enactment evaluating the feasibility of allowing commercial wireless services, licensed or unlicensed, to share the use of the frequencies between 3100 megahertz and 3550 megahertz. This section would further direct the FCC to submit a report to the President and to Congress, within 18 months of enactment, evaluating the feasibility of allowing commercial wireless services, licensed or unlicensed, to share the use of the frequencies between 3700 megahertz and 4200 megahertz.

Both reports would be required to include an assessment of the impacts such sharing may have on the incumbent Federal and non-Federal operations in the relevant bands (along with criteria that can protect such operations from harmful interference), and an identification of which frequencies in those bands may be most suitable for sharing with commercial services, if such sharing is determined to be feasible.

Section 6. Communications facilities deployment on Federal property.

This section would amend section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 (47 U.S.C. 1455) to require executive agencies to use applications developed by the General Services Administration (GSA) for easements, rights-of-way, and lease requests and GSA-developed master contracts for placement of communications facility installations on Federal property. The section would specify that fees for leases be based on direct cost recovery, as they already are for easements and rights-of-way. Review of any application submitted under this section would have to occur within 270 days. This section would further require a Federal agency to provide any applicant for a Federal easement, right-of-way, or lease with the following: a written denial of the application, if applicable; a written explanation of any delay longer than 5 months; and a point of contact within the agency. This section also would expand the types of infrastructure covered by section 6409 to further facilitate the deployment of wireless, wireline, licensed, and unlicensed communications services.

Subsection (c) of this section would require the NTIA, in coordination with other agencies, to develop within 2 years of enactment recommendations to streamline the process for considering applications, including procedures for tracking and expediting decisions on applications, and for prioritizing or streamlining permits for construction in a previously-disturbed right-of-way.

Section 7. Broadband infrastructure deployment.

This section would establish procedures to facilitate the use of rights-of-way on Federal-aid highways to accommodate broadband infrastructure and to improve broadband connectivity to rural communities and broadband services in urban areas. The section would require the Secretary of Transportation to ensure that each State that receives funds under chapter 1 of title 23 of the United States Code meets requirements for broadband consultation, including identifying a broadband utility coordinator responsible for coordinating broadband infrastructure rights-of-way needs, and establishing a process for registering broadband infrastructure entities that seek to be included in broadband infrastructure right-of-way coordination efforts within the State. The section also would require the Secretary of Transportation to ensure that those States coordinate broadband infrastructure right-of-way efforts with state-wide telecommunications and broadband plans, and with State and local transportation and land use plans, and include in their State broadband infrastructure coordination plans strategies to minimize repeated excavations that involve the installation of broadband infrastructure in a right-of-way. The section would require State departments of transportation to take appropriate measures to en-

sure that existing broadband infrastructure entities are not disadvantaged compared to other broadband infrastructure entities, with respect to the program. This section would apply only to activities for which Federal obligations or expenditures are initially approved on or after the date of enactment of the Act.

Section 8. National broadband facilities asset database.

This section would require the Office of Science and Technology Policy (OSTP), in consultation with the FCC, NTIA, GSA, National Institute of Standards and Technology, and OMB, to establish and operate a database, not later than June 30, 2018, of Federal property capable of supporting the installation of communications facilities. Federal agencies would be required to provide OSTP with information for inclusion in the database on covered property owned, leased, or otherwise managed by the agency. This requirement would apply only to Federal agencies. This section would require a process for withholding data from the database to protect national security and public safety. This section would further require OSTP to report to Congress on progress in establishing the database within 180 days of enactment, then annually thereafter until the database is fully operational. State governments would be able to provide information on covered property owned, leased, or otherwise managed by the State for inclusion in the database, but would not be required to do so. Within 1 year of enactment, the Director of OSTP would be required to prepare and to submit to the relevant committees in the Senate and the House of Representatives a report on ways to incentivize State and local governments to provide information for inclusion in the database. Within 2 years from the establishment of the database, the Director of OSTP would be required to provide an update on that report and provide recommendations on ways to further incentivize State and local governments to provide information.

Section 9. Reallocation incentives.

This section would direct the Department of Commerce to submit within 18 months of enactment a report to Congress on legislative or regulatory proposals to incentivize Federal entities to relinquish or share their spectrum for commercial wireless broadband services. This report also would evaluate allowing the winners of spectrum auctions involving spectrum being reallocated from Federal use to pay Federal entities to accelerate the post-auction relocation and transition process.

Section 10. Bidirectional sharing study.

This section would direct the FCC to conduct a bidirectional sharing study to determine the best means of providing Federal entities flexible access to non-Federal spectrum on a shared basis. This study would be submitted to Congress along with any recommendations for legislation or proposed regulations.

Section 11. Unlicensed services in guard bands.

This section would require the FCC to allow unlicensed use in the guard bands of any auctioned spectrum bands, as long as doing so is feasible and would not cause harmful interference to a li-

censed service or a Federal service operating in the guard band or in an adjacent band.

Section 12. Pre-auction funding.

This section would allow Federal agencies to receive pre-auction funding for potential auctions that are likely to occur within 8 years, rather than the current statutory window of 5 years.

Section 13. Immediate transfer of funds.

This section would accelerate the relocation of Federal entities by allowing existing Spectrum Relocation Fund balances to be transferred to agencies for transition efforts immediately upon completion of an auction, rather than after the actual receipt by the fund of auction proceeds.

Section 14. Amendment to the Spectrum Pipeline Act of 2015.

This section would amend section 1008 of the Spectrum Pipeline Act (Public Law 114–74; 129 Stat. 584) to require public comment for that section’s reports.

Section 15. GAO assessment of unlicensed spectrum and wi-fi use in low-income neighborhoods.

This section would direct the Comptroller General of the United States to conduct a study to evaluate availability of broadband Internet access using unlicensed spectrum and wireless networks in low income neighborhoods, in particular for elementary and secondary school-age children in such neighborhoods. The Comptroller General also would be directed to evaluate barriers to deployment and use of such networks; incentives, policies, or requirements that would increase the availability of unlicensed spectrum and related technologies in low-income neighborhoods; and how to encourage home broadband adoption by households with elementary and secondary school-age children that are in low-income neighborhoods. The section would require the Comptroller General to issue a report, not later than 1 year after the date of enactment of this Act, summarizing the findings of the study and making recommendations with respect to potential incentives, policies, and requirements that could help overcome barriers to the availability unlicensed spectrum and related technologies in low-income neighborhoods and the adoption of broadband by households with elementary and secondary school-age children that are in low-income neighborhoods.

Section 16. Rulemaking related to partitioning or disaggregating licenses.

This section would direct the FCC, not later than 1 year after the date of enactment of this Act, to initiate a rulemaking proceeding to assess whether to establish a program, or modify existing programs, under which a licensee that receives a license for the exclusive use of spectrum in a specific geographic area under section 301 of the Communications Act of 1934 (47 U.S.C. 301) may partition or disaggregate the license by sale or long-term lease to provide services consistent with the license while also making unused spectrum available to eligible small carriers or carriers serving rural areas if the Commission finds such a program would promote the

availability of advanced telecommunications services in rural areas or spectrum availability for eligible small carriers.

The section would direct the Commission to consider whether reduced performance requirements with respect to spectrum obtained through such program would facilitate deployment of advanced telecommunications services in the areas covered by the program; what conditions would be needed on transfers of spectrum under such a program to allow eligible small carriers that obtain spectrum under the program to build out the spectrum in a reasonable period of time; what incentives would be appropriate to encourage licensees to lease or sell spectrum, including extending a license term or modifying performance requirements of the license relating to the leased or sold spectrum; and any other incentives considered by the Commission that would further the goals of this section.

The section would direct that if a party fails to meet any build out requirements set by the Commission for any spectrum sold or leased under this section, the right to the spectrum would be forfeited to the Commission unless the Commission found that there was good cause for the failure to meet those requirements. The section would allow the Commission to offer licensees incentives or reduced performance requirements under this section only if the Commission found that doing so would likely result in increased availability of advanced telecommunications services in a rural area.

Section 17. Unlicensed spectrum policy.

This section would direct the FCC to make available on an unlicensed basis spectrum sufficient to meet demand for unlicensed wireless broadband operations if, after taking into account the future needs of other spectrum users, doing so would be reasonable and in the public interest. The section would require the Commission to take action to implement these efforts within 18 months after the date of enactment of this Act.

Section 18. National plan for unlicensed spectrum.

This section would require the FCC, not later than 1 year after the date of enactment of this Act, to develop, in consultation with the NTIA, a national plan for making additional radio frequency bands available for unlicensed operations. The section would require the national plan to identify an approach that ensures that consumers have access to additional spectrum to conduct unlicensed operation in a range of radio frequencies to meet consumer demand. The section would recommend specific actions by the Commission and the NTIA to permit unlicensed operation in additional radio frequency ranges. Those frequency ranges would be ones that the Commission finds are consistent with an unlicensed spectrum policy established pursuant to section 17 of this Act; that would expand opportunities for unlicensed operations in a spectrum band or that would otherwise improve spectrum use and intensity of use of bands where unlicensed operations are already permitted; that would not cause harmful interference to Federal or non-Federal users of such bands; and that would not significantly impact homeland security or national security communications. This section also would require the Commission, in consultation with the NTIA, to examine additional ways, with respect to existing and planned

databases or spectrum access systems designed to promote spectrum sharing and access to spectrum for unlicensed operations, to improve accuracy and efficacy; reduce burdens on consumers, manufacturers, and service providers; and to protect sensitive Government information.

To be included as part of the plan developed under this section, the NTIA would be required to share with the Commission recommendations about how to reform the Spectrum Relocation Fund to address costs incurred by Federal entities related to sharing radio frequency bands with radio technologies conducting unlicensed operations and to ensure that the Fund has sufficient funds to cover the costs associated with such sharing and other expenditures allowed of the fund under section 118 of the National Telecommunications and Information Administration Organization Act (47 U.S.C. 928).

The section would require the Commission to submit a report that describes the plan developed under this section, including any recommendations for legislative change, and to make the report publicly available on the Commission's website.

Section 19. Spectrum challenge prize.

This section would require that the Secretary of Commerce, in consultation with the Assistant Secretary of Commerce for Communications and Information and the Under Secretary of Commerce for Standards and Technology, subject to availability of funds for prize competitions under this section, conduct prize competitions to dramatically accelerate the development and commercialization of technology that improves spectrum efficiency and is capable of cost-effective deployment, and define a measurable set of performance goals for participants in the prize competitions to demonstrate their solutions on a level playing field while making a significant advancement over the current state of the art. The section would allow the Secretary to enter into a grant, contract, cooperative agreement, or other agreement with a private sector for-profit or nonprofit entity to administer the prize competitions; to invite the Defense Advanced Research Projects Agency, the FCC, the National Aeronautics and Space Administration, the National Science Foundation, or any other Federal agency to provide advice and assistance in the design or administration of the prize competitions; and to award not more than \$5 million in the aggregate to the winner or winners of the prize competitions. The FCC would be required to publish a technical paper on spectrum efficiency, providing criteria that may be used for the design of the prize competitions, not later than 180 days after the date on which funds for prize competitions are made available pursuant to this section. The section would authorize the appropriation of such sums as may be necessary to carry out this section.

Section 20. Wireless telecommunications tax and fee collection fairness.

Without affecting the right of a State or local jurisdiction to require the collection of any tax, fee, or surcharge in connection with a specified financial transaction, this section would prevent a State or local jurisdiction from requiring a person to collect from, or remit on behalf of, any other person a State or local tax, fee, or sur-

charge imposed on a purchaser or user with respect to the purchase or use of any wireless telecommunications service within the State unless the collection or remittance is in connection with a financial transaction between the person that the State or local jurisdiction requires to collect or remit the tax, fee, or surcharge and the purchaser or user of the wireless telecommunications service. The section would permit any person aggrieved by the requirement of collecting or remitting on behalf of any other person such a fee in violation of this section to bring a civil action in an appropriate United States district court for equitable relief. Notwithstanding section 1341 of title 28 of the United States Code, or the constitution or laws of any State, the section would give the district courts of the United States jurisdiction, without regard to the amount in controversy or citizenship of the parties, to grant such mandatory or prohibitive injunctive relief, interim equitable relief, and declaratory judgments as may be necessary to prevent, restrain, or terminate acts in violation of the section's prohibition on the requirement of collection or remittance of fees.

Section 21. Rules of construction.

This section would provide that each range of frequencies described in the bill shall be construed as being inclusive of the upper and lower frequencies in the range. This section would further provide that nothing in the bill shall affect any requirements under section 156 of the National Telecommunications and Information Administration Organization Act (47 U.S.C. 921 note), as added by the National Defense Authorization Act for Fiscal Year 2000.

Section 22. Relationship to Middle Class Tax Relief and Job Creation Act of 2012.

This section would provide that nothing in the bill shall limit, restrict, or circumvent the implementation of the public safety network known as FirstNet.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF
2013

[Public Law 112–96; 126 Stat. 156]

SEC. 6409. WIRELESS FACILITIES DEPLOYMENT.

[47 U.S.C. 1455]

(a) FACILITY MODIFICATIONS.—

(1) IN GENERAL.—Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

(2) **ELIGIBLE FACILITIES REQUEST.**—For purposes of this subsection, the term “eligible facilities request” means any request for modification of an existing wireless tower or base station that involves—

- (A) collocation of new transmission equipment;
- (B) removal of transmission equipment; or
- (C) replacement of transmission equipment.

(3) **APPLICABILITY OF ENVIRONMENTAL LAWS.**—Nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.

[(b) FEDERAL EASEMENTS AND RIGHTS-OF-WAY.—

[(1) GRANT.—If an executive agency, a State, a political subdivision or agency of a State, or a person, firm, or organization applies for the grant of an easement or right-of-way to, in, over, or on a building or other property owned by the Federal Government for the right to install, construct, and maintain wireless service antenna structures and equipment and backhaul transmission equipment, the executive agency having control of the building or other property may grant to the applicant, on behalf of the Federal Government, an easement or right-of-way to perform such installation, construction, and maintenance.

[(2) APPLICATION.—The Administrator of General Services shall develop a common form for applications for easements and rights-of-way under paragraph (1) for all executive agencies that shall be used by applicants with respect to the buildings or other property of each such agency.

[(3) FEE.—

[(A) IN GENERAL.—Notwithstanding any other provision of law, the Administrator of General Services shall establish a fee for the grant of an easement or right-of-way pursuant to paragraph (1) that is based on direct cost recovery.

[(B) EXCEPTIONS.—The Administrator of General Services may establish exceptions to the fee amount required under subparagraph (A)—

[(i) in consideration of the public benefit provided by a grant of an easement or right-of-way; and

[(ii) in the interest of expanding wireless and broadband coverage.

[(4) USE OF FEES COLLECTED.—Any fee amounts collected by an executive agency pursuant to paragraph (3) may be made available, as provided in appropriations Acts, to such agency to cover the costs of granting the easement or right-of-way.

[(c) MASTER CONTRACTS FOR WIRELESS FACILITY SITINGS.—

[(1) IN GENERAL.—Notwithstanding section 704 of the Telecommunications Act of 1996 or any other provision of law, and not later than 60 days after the date of the enactment of this Act, the Administrator of General Services shall—

[(A) develop 1 or more master contracts that shall govern the placement of wireless service antenna structures on buildings and other property owned by the Federal Government; and

[(B) in developing the master contract or contracts, standardize the treatment of the placement of wireless service antenna structures on building rooftops or facades, the placement of wireless service antenna equipment on rooftops or inside buildings, the technology used in connection with wireless service antenna structures or equipment placed on Federal buildings and other property, and any other key issues the Administrator of General Services considers appropriate.

[(2) APPLICABILITY.—The master contract or contracts developed by the Administrator of General Services under paragraph (1) shall apply to all publicly accessible buildings and other property owned by the Federal Government, unless the Administrator of General Services decides that issues with respect to the siting of a wireless service antenna structure on a specific building or other property warrant nonstandard treatment of such building or other property.

[(3) APPLICATION.—The Administrator of General Services shall develop a common form or set of forms for wireless service antenna structure siting applications under this subsection for all executive agencies that shall be used by applicants with respect to the buildings and other property of each such agency.

[(d) EXECUTIVE AGENCY DEFINED.—In this section, the term “executive agency” has the meaning given such term in section 102 of title 40, United States Code.]¹

(b) *FEDERAL EASEMENTS, RIGHTS-OF-WAY, AND LEASES.*—

(1) *GRANT.*—*If an executive agency, a State, a political subdivision or agency of a State, or a person, firm, or organization applies for the grant of an easement, right-of-way, or lease to, in, over, or on a building or other property owned by the Federal Government for the right to install, construct, modify, or maintain a communications facility installation, the executive agency having control of the building or other property may grant to the applicant, on behalf of the Federal Government, subject to paragraph (5), an easement, right-of-way, or lease to perform such installation, construction, modification, or maintenance.*

(2) *APPLICATION.*—

(A) *IN GENERAL.*—*The Administrator of General Services shall develop a common form for applications for easements, rights-of-way, and leases under paragraph (1) for all executive agencies that, except as provided in subparagraph (B), shall be used by all executive agencies and applicants with respect to the buildings or other property of each such agency.*

(B) *EXCEPTION.*—*The requirement under subparagraph (A) for an executive agency to use the common form developed by the Administrator of General Services shall not apply to an executive agency if the head of an executive*

¹An application for an easement, right-of-way, or lease that was made or granted under section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 (47 U.S.C. 1455) before the effective date of this Act would continue, subject to that section as in effect on the day before such effective date.

agency notifies the Administrator that the executive agency uses a substantially similar application.

(3) **FEE.**—

(A) **IN GENERAL.**—Notwithstanding any other provision of law, the Administrator of General Services shall establish a fee for the grant of an easement, right-of-way, or lease pursuant to paragraph (1) that is based on direct cost recovery.

(B) **EXCEPTIONS.**—The Administrator of General Services may establish exceptions to the fee amount required under subparagraph (A)—

(i) in consideration of the public benefit provided by a grant of an easement, right-of-way, or lease; and

(ii) in the interest of expanding wireless and broadband coverage.

(4) **USE OF FEES COLLECTED.**—Any fee amounts collected by an executive agency pursuant to paragraph (3) may be made available, as provided in appropriations Acts, to such agency to cover the costs of granting the easement, right-of-way, or lease.

(5) **TIMELY CONSIDERATION OF APPLICATIONS.**—

(A) **IN GENERAL.**—Not later than 270 days after the date on which an executive agency receives a duly filed application for an easement, right-of-way, or lease under this subsection, the executive agency shall—

(i) grant or deny, on behalf of the Federal Government, the application; and

(ii) notify the applicant of the grant or denial.

(B) **EXPLANATION OF DENIAL.**—If an executive agency denies an application under subparagraph (A), the executive agency shall notify the applicant in writing, including a clear statement of the reasons for the denial.

(C) **APPLICABILITY OF ENVIRONMENTAL LAWS.**—Nothing in this paragraph shall be construed to relieve an executive agency of the requirements of division A of subtitle III of title 54, United States Code, or the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).

(D) **POINT OF CONTACT.**—Upon receiving an application under subparagraph (A), an executive agency shall designate one or more appropriate individuals within the executive agency to act as a point of contact with the applicant.

(c) **MASTER CONTRACTS FOR COMMUNICATIONS FACILITY INSTALLATION SITINGS.**—

(1) **IN GENERAL.**—Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104; 110 Stat. 151) or any other provision of law, the Administrator of General Services shall—

(A) develop one or more master contracts that shall govern the placement of communications facility installations on buildings and other property owned by the Federal Government; and

(B) in developing the master contract or contracts, standardize the treatment of the placement of communications facility installations on building rooftops or facades, the placement of communications facility installations on rooftops or inside buildings, the technology used in connection

with communications facility installations placed on Federal buildings and other property, and any other key issues the Administrator of General Services considers appropriate.

(2) *APPLICABILITY.—The master contract or contracts developed by the Administrator of General Services under paragraph (1) shall apply to all publicly accessible buildings and other property owned by the Federal Government, unless the Administrator of General Services decides that issues with respect to the siting of a communications facility installation on a specific building or other property warrant nonstandard treatment of such building or other property.*

(3) *APPLICATION.—*

(A) *IN GENERAL.—The Administrator of General Services shall develop a common form or set of forms for communications facility installation siting applications that, except as provided in subparagraph (B), shall be used by all executive agencies and applicants with respect to the buildings and other property of each such agency.*

(B) *EXCEPTION.—The requirement under subparagraph (A) for an executive agency to use the common form or set of forms developed by the Administrator of General Services shall not apply to an executive agency if the head of the executive agency notifies the Administrator that the executive agency uses a substantially similar application.*

(d) *DEFINITIONS.—In this section:*

(1) *COMMUNICATIONS FACILITY INSTALLATION.—The term “communications facility installation” includes—*

(A) *any infrastructure, including any transmitting device, tower, or support structure, and any equipment, switches, wiring, cabling, power sources, shelters, or cabinets, associated with the licensed or permitted unlicensed wireless or wireline transmission of writings, signs, signals, data, images, pictures, and sounds of all kinds; and*

(B) *any antenna or apparatus that—*

(i) *is designed for the purpose of emitting radio frequency;*

(ii) *is designed to be operated, or is operating, from a fixed location pursuant to authorization by the Commission or is using duly authorized devices that do not require individual licenses; and*

(iii) *is added to a tower, building, or other structure.*

(2) *EXECUTIVE AGENCY.—The term “executive agency” has the meaning given such term in section 102 of title 40, United States Code.*

**NATIONAL TELECOMMUNICATIONS AND INFORMATION
ADMINISTRATION ORGANIZATION ACT**

[47 U.S.C. 901 et seq.]

SEC. 118. SPECTRUM RELOCATION FUND.

[47 U.S.C. 928]

* * * * *

(d) *FUND AVAILABILITY.—*

(1) APPROPRIATION.—There are hereby appropriated from the Fund such sums as are required to pay the relocation or sharing costs specified in subsection (c).

(2) TRANSFER CONDITIONS.—None of the funds provided under this subsection may be transferred to any eligible Federal entity—

(A) unless the eligible Federal entity has submitted a transition plan to the NTIA as required by paragraph (1) of section 113(h), the Technical Panel has found such plan sufficient under paragraph (4) of such section, and the NTIA has made available such plan on its website as required by paragraph (5) of such section;

(B) unless the Director of OMB has determined, in consultation with the NTIA, the appropriateness of such costs and the timeline for relocation or sharing; and

(C) until 30 days after the Director of OMB has submitted to the Committees on Appropriations and Energy and Commerce of the House of Representatives for approval, to the Committees on Appropriations and Commerce, Science, and Transportation of the Senate for approval, and to the Comptroller General a detailed plan describing specifically how the sums transferred from the Fund will be used to pay relocation or sharing costs in accordance with such subsection and the timeline for such relocation or sharing.

Unless disapproved within 30 days, the amounts in the Fund shall be available immediately. If the plan is disapproved, the Director may resubmit a revised plan.

(3) TRANSFERS FOR PRE-AUCTION COSTS.—

(A) IN GENERAL.—Subject to subparagraph (B), the Director of OMB may transfer to an eligible Federal entity, at any time (including prior to a scheduled auction), such sums as may be available in the Fund to pay relocation or sharing costs related to pre-auction estimates or research, as such costs are described in section 113(g)(3)(A)(iii).

(B) NOTIFICATION.—No funds may be transferred pursuant to subparagraph (A) unless—

(i) the notification provided under paragraph (2)(C) includes a certification from the Director of OMB that—

(I) funds transferred before an auction will likely allow for timely implementation of relocation or sharing, thereby increasing net expected auction proceeds by an amount not less than the time value of the amount of funds transferred; and

(II) the auction is intended to occur not later than **[5 years]** *8 years* after transfer of funds; and

(ii) the transition plan submitted by the eligible Federal entity under section 113(h)(1) provides—

(I) to the fullest extent possible, for sharing and coordination of eligible frequencies with non-Federal users, including reasonable accommodation by the eligible Federal entity for the use of eligible frequencies by non-Federal users during the period that the entity is relocating its spectrum uses

(in this clause referred to as the 'transition period');

(II) for non-Federal users to be able to use eligible frequencies during the transition period in geographic areas where the eligible Federal entity does not use such frequencies;

(III) that the eligible Federal entity will, during the transition period, make itself available for negotiation and discussion with non-Federal users not later than 30 days after a written request therefor; and

(IV) that the eligible Federal entity will, during the transition period, make available to a non-Federal user with appropriate security clearances any classified information (as defined in section 798(b) of title 18, United States Code) regarding the relocation process, on a need-to-know basis, to assist the non-Federal user in the relocation process with such eligible Federal entity or other eligible Federal entities.

(C) APPLICABILITY TO CERTAIN COSTS.—

(i) IN GENERAL.—The Director of OMB may transfer under subparagraph (A) not more than \$10,000,000 for costs incurred after June 28, 2010, but before the date of the enactment of the Middle Class Tax Relief and Job Creation Act of 2012.

(ii) SUPPLEMENT NOT SUPPLANT.—Any amounts transferred by the Director of OMB pursuant to clause (i) shall be in addition to any amounts that the Director of OMB may transfer for costs incurred on or after the date of the enactment of the Middle Class Tax Relief and Job Creation Act of 2012.

(4) REVERSION OF UNUSED FUNDS.—Any amounts in the Fund that are remaining after the payment of the relocation or sharing costs that are payable from the Fund shall revert to and be deposited in the general fund of the Treasury, for the sole purpose of deficit reduction, not later than 8 years after the date of the deposit of such proceeds to the Fund, unless within 60 days in advance of the reversion of such funds, the Director of OMB, in consultation with the NTIA, notifies the congressional committees described in paragraph (2)(C) that such funds are needed to complete or to implement current or future relocation or sharing arrangements.

(e) TRANSFER TO ELIGIBLE FEDERAL ENTITIES.—

(1) TRANSFER.—

(A) Amounts made available pursuant to subsection (d) shall be transferred to eligible Federal entities, as defined in section 113(g)(1) of this Act.

(B) An eligible Federal entity may receive more than one such transfer, but if the sum of the subsequent transfer or transfers exceeds 10 percent of the original transfer—

(i) such subsequent transfers are subject to prior approval by the Director of OMB as required by subsection (d)(2)(B);

(ii) the notice to the committees containing the plan required by subsection (d)(2)(C) shall be not less than 45 days prior to the date of the transfer that causes such excess above 10 percent; and

(iii) such notice shall include, in addition to such plan, an explanation of need for such subsequent transfer or transfers.

(C) Such transferred amounts shall be credited to the appropriations account of the eligible Federal entity which has incurred, or will incur, such costs, and shall, subject to paragraph (2), remain available until expended.

(D) *At the request of an eligible Federal entity, the Director of the Office of Management and Budget (in this subsection referred to as “OMB”) may transfer the amount under subparagraph (A) immediately—*

(i) after the frequencies are reallocated by competitive bidding under section 309(j) of the Communications Act of 1934 (47 U.S.C. 309(j)); or

(ii) in the case of an incumbent Federal entity that is incurring relocation or sharing costs to accommodate sharing spectrum frequencies with another Federal entity, after the frequencies from which the other eligible Federal entity is relocating are reallocated by competitive bidding under section 309(j) of the Communications Act of 1934 (47 U.S.C. 309(j)), without regard to the availability of such sums in the Fund.

(E) *Prior to the deposit of proceeds into the Fund from an auction, the Director of OMB may borrow from the Treasury the amount under subparagraph (A) for a transfer under subparagraph (D). The Treasury shall immediately be reimbursed, without interest, from funds deposited into the Fund.*

(2) RETRANSFER TO FUND.—An eligible Federal entity that has received such amounts shall report its expenditures to OMB and shall transfer any amounts in excess of actual relocation or sharing costs back to the Fund immediately after the NTIA has notified the Commission that the relocation of the entity or implementation of the sharing arrangement by the entity is complete, or has determined that such entity has unreasonably failed to complete such relocation or the implementation of such arrangement in accordance with the timeline required by subsection (d)(2)(B).

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SPECTRUM PIPELINE ACT OF 2015

[Public Law 114–74; 129 Stat.584]

SEC. 1008. REPORTS TO CONGRESS.

Not later than 3 years after the date of the enactment of this Act, the Commission, *after notice and an opportunity for public comment*, shall submit to Congress—

(1) a report containing an analysis of the results of the rules changes relating to the frequencies between 3550 megahertz and 3650 megahertz; and

(2) a report containing an analysis of proposals to promote and identify additional spectrum bands that can be shared between incumbent uses and new licensed, and unlicensed services under such rules and identification of at least 1 gigahertz between 6 gigahertz and 57 GHz for such use.

