Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Wireless Telecommunications Bureau Seeks Comment on the State of Mobile Wireless Competition	)	WT Docket No. 17-69
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	)	

COMMENTS OF COMPETITIVE CARRIERS ASSOCIATION

Steven K. Berry
President & CEO

Rebecca Murphy Thompson
EVP & General Counsel

Courtney Neville
Policy Counsel

COMPETITIVE CARRIERS ASSOCIATION
805 15th Street NW, Suite 401
Washington, DC 20005
(202) 449-9866
www.ccamobile.org

May 8, 2017

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Competitive Carriers Association ("CCA")[1] hereby submits the following comments in response to the Federal Communications Commission's ("FCC" or "Commission") Public Notice seeking comment on the state of competition in the mobile wireless marketplace.[2]

I. INTRODUCTION AND SUMMARY

As Sherlock Holmes struggled to crack the lead of his first mystery in "A Study in Scarlet," he noted to his confidant Dr. Watson that, "[i]t is a capital mistake to theorize before one has all the evidence. Insensibly, one begins to twist facts to suit theories, instead of theories to suit facts."[3] More than a century after Sir Arthur Conan Doyle penned this scene, FCC Chairman Ajit Pai echoes Mr. Holmes when noting that "hopes and good intentions can't override economic analysis and hard data."[4] Yet, the Commission's understanding of the mobile

[1] CCA is the nation's leading association for competitive wireless providers and stakeholders across the United States. CCA's membership includes nearly 100 competitive wireless providers ranging from small, rural carriers serving fewer than 5,000 customers to regional and national providers serving millions of customers. CCA also represents approximately 200 associate members including vendors and suppliers that provide products and services throughout the mobile communications ecosystem.

[2] *Wireless Telecommunications Bureau Seeks Comment on the State of Mobile Wireless Competition*, Public Notice, WT Docket No. 17-69, DA 17-267 (rel. Mar. 23, 2017) ("Public Notice").

[3] Sir Arthur Conan Doyle, *A Study in Scarlet*, Ward Lock & Co. (1887).

[4] Ajit Pai, Chairman, FCC, Statement, *Business Data Services in an Internet Protocol Environment*, WC Docket No. 16-143; *Technology Transitions*, GN Docket No. 13-5; *Special Access for Price Cap Local Exchange Carriers*, WC Docket No. 05-25; *AT&T Corporation Petition for Rulemaking to Reform*

market is plagued by fractured data and generalizations of a unique ecosystem that cannot be oversimplified by a stamp of "effectively competitive" or otherwise. All of this while the Commission is making critical decisions during a transitional period in the mobile industry that will dramatically affect carriers, consumers, and the economy alike. CCA represents nearly 100 mobile carriers, yet by the end of 2016 only four carriers' market share is significant enough to be meaningfully represented in a top-down view of the market.

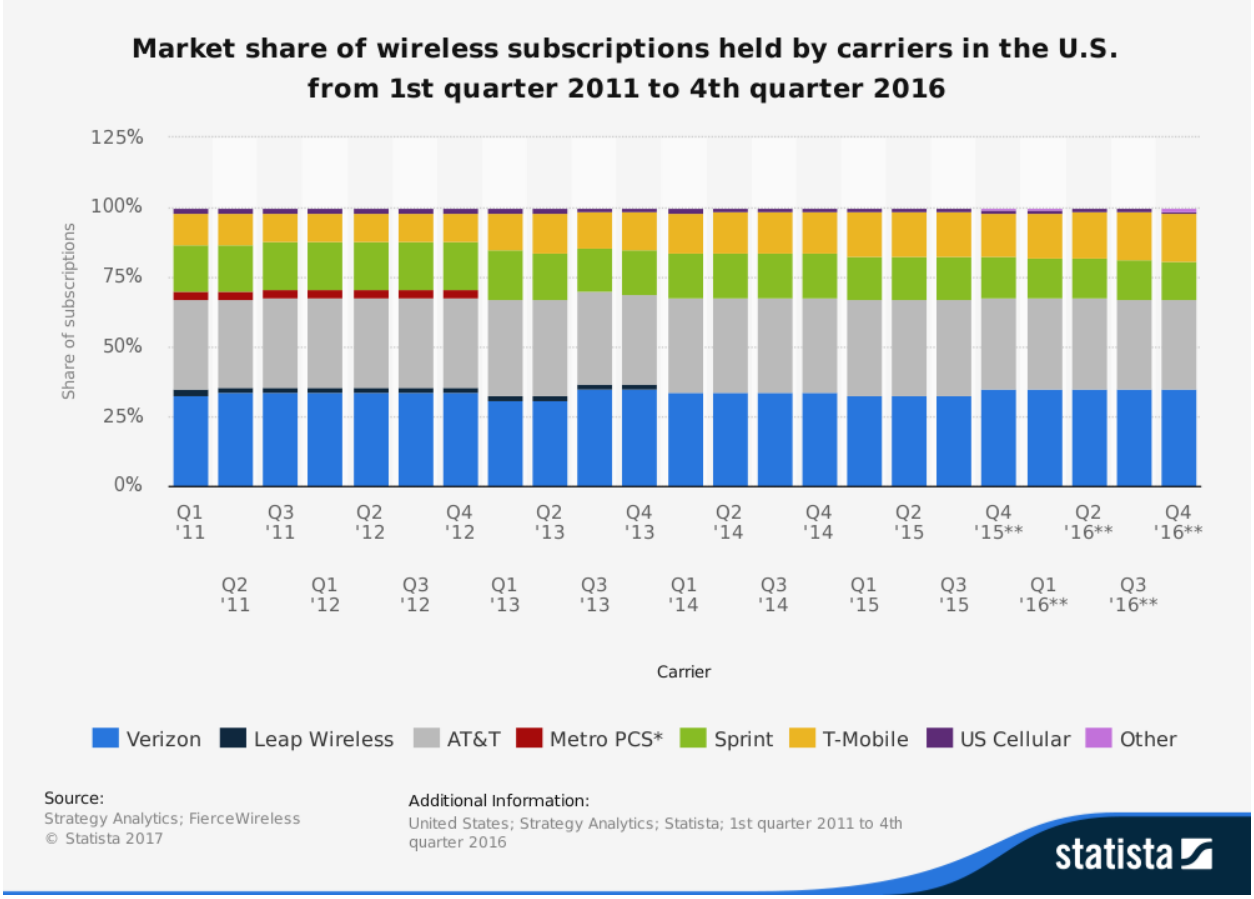

Figure 1. Market share of wireless subscriptions held by carriers in the U.S. from 1st Quarter 2011 to 4th Quarter 2016.
Source: Statista, 2017.

Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, RM-10593 at 1 (Apr. 21, 2017).

The FCC cannot responsibly say the vast market shares depicted above represent a competitive market without trivializing the significant contributions rural and regional carriers make to their communities every day. To advance next generation technology and services throughout the country, the Commission's upcoming *Twentieth Annual Report on the State of Competition in the Mobile Wireless Market* is a prime opportunity to correct these discrepancies, and to implement the Chairman's vision for the Commission and the rigors of accurate data, economic or otherwise, on which it must rely.

Competition for mobile wireless service is not present nationwide. Indeed, the Commission's recent *Mobility Fund II Order* was adopted to address the "rural and high-cost areas of our country [that] have been left behind."[5] The Chairman remarked in January, announcing the Connect America Fund Phase II ("CAF-II") auction, that the Commission is taking steps "to ensure that the citizens of every state that was promised new, better, faster broadband service by the FCC back in 2015" actually receives that service.[6] Likewise, the Commission's December 2014 *Connect America Fund II Report and Order* sought to ensure that "consumers in partially served [areas] are not left behind."[7] The Commission recognizes, and CCA member experience validates, that many parts of the country do not receive, much less have competitive choice for, mobile wireless service. The FCC should therefore identify and collect data necessary to undertake a comprehensive market power analysis, and study the market prior to drawing conclusions. On-the-ground experience, including that obtained just by driving across the country, makes clear that mobile wireless service is not yet available

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[5] *Id.* ¶ 1.

[6] Ajit Pai, Chairman, FCC, Statement, *Connect America Fund*, WC Docket No. 10-90; *Universal Service Reform –Mobility Fund*, WT Docket No. 10-208 (Mar. 7, 2017).

[7] *Connect America Fund*, Report and Order, WC Docket No. 10-90 et al. ¶ 44 (rel. Dec. 18, 2014) ("December 2014 CAF II Order").

everywhere, much less on a competitive basis as required by statute. Congress stands in bipartisan agreement on this point, and has continuously noted that a strong foundation based on data that accurately reflects consumers' on-the-ground experience is critical to advancing economic decisions.[8]

Statute requires that the Commission undertake a competitive analysis of the market and report its results. The wireless market is not one monolithic market extending from coast to coast but rather a series of markets, each impacted by unique geographic topographic and propagation conditions. Nevertheless, many past *Reports* have relied on anecdotal information and tangential analyses to draw conclusions, or more accurately, to avoid drawing conclusions as is required. Commenting on previous FCC *Reports*, Chairman Pai himself has acknowledged that "[b]edrock principles of good government require that we make fact-based decisions that reflect marketplace realities. But doing so on a consistent basis has not been the hallmark of FCC decision-making in recent years."[9] CCA encourages this Commission to right the ship, and undertake a nuanced, data-driven analysis that it has advocated for and that is required by law. To understand the true competitive nature of the market, the Commission must perform a data-driven analysis. The FCC first must undertake a traditional market analysis that accurately identifies product and geographic markets, and that applies antitrust principles consistent with other agencies and countries. Next, the FCC should acknowledge the limitations of wireless

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[8] *See* Letter from Sens. Wicker (R-MS) and Manchin (D-WV), U.S. Senate, to The Hon. Ajit Pai (Apr. 12, 2017), *available at* https://www.wicker.senate.gov/public/_cache/files/d2d30dd8-76f2-4c45-8d3a-b64c9018265c/041217-fcc-rural-broadband-auctions-task-force-letter.pdf (noting that "coverage data that accounts for the actual consumer experience in our rural communities is a necessary step in the effort to close the digital divide") ("Wicker & Manchin April 2017 Letter").

[9] Statement of Commissioner Ajit Pai, *On the FCC's Ostrich-Like Approach to Competition in the Wireless Market* (rel. Dec. 23, 2015), *available at* https://apps.fcc.gov/edocs_public/attachmatch/DOC-337035A1.pdf.

service and recognize that the appropriate geographic area to analyze the mobile market is quite small.[10] Once the Commission has a clear and accurate picture of the state of the mobile markets and the appropriate geographic metric, it can then implement policy changes needed "to have mobile services available everywhere people live, work, and travel."[11]

The mobile wireless market will continue to evolve, and reforms related to universal service, business data service, spectrum, and planned infrastructure reform will have certain, yet unpredictable impacts on the ecosystem. These shifts continue to occur as carriers move toward 5G and Internet of Things ("IoT") technologies, which creates uncertainty regarding how competition in these markets will progress. During this period of transition, the Commission should refrain from broad, sweeping characterizations of the state of competition in the mobile wireless market. Instead, it should observe each facet of the market – beginning with urban, suburban, rural, and remote factions – to understand how each evolves in light of these changes. The upcoming *Report* is the first under the new Administration, and is an ideal time to secure the Chairman's legacy as one grounded in concrete, demonstrable data and information to ensure that millions of Americans living in rural areas are not neglected amid assumptions reflecting only the data from population centers. The FCC likewise should use this data to move swiftly on items that will reduce barriers to deployment: spectrum, infrastructure, universal service, consolidation, access to devices and content, and public safety. Pro-competitive policies are necessary to achieve ubiquitous, nationwide service, and to meet Congress' statutory requirement for competition.

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[10] *Connect America Fund*; *Universal Service Reform–Mobility Fund*, Report and Order and Further Notice of Proposed Rulemaking, FCC 17-11, WC Docket No. 10-90, WT Docket No. 10-208, ¶¶ 48, 52 (rel. Mar. 7, 2017) ("*Mobility Fund II Order*").

[11] *See id*. ¶ 42.

II. THE *TWENTIETH MOBILE COMPETITION REPORT* IS A TIMELY VEHICLE TO IMPLEMENT THE COMMISSION'S ECONOMIC AND DATA ANALYTIC GOALS

A. The Commission's Upcoming *Report* Should Be Grounded in Economic Analysis, Consistent with Congress's Mandate.

The Telecommunications Act of 1996, *as amended*, mandates that the Commission undertake a rigorous analysis of the state of competition in the wireless market.[12] Congress specifically delineated certain requirements for this analysis, namely that "[s]uch analysis shall include an identification of the number of competitors in various commercial mobile services, an analysis of whether or not there is effective competition, an analysis of whether any of such competitors have a dominant share of the market for such services, and a statement of whether additional providers or classes of providers in those services would be likely to enhance competition."[13] To this day, numerous members of Congress attest to the unfortunate reality of insufficient and inaccessible wireless coverage throughout the United States, both as public servants responding to their constituents and as consumers in the mobile wireless ecosystem themselves. Committee hearings in both the House and Senate find members lamenting the consistent, uniform availability of mobile broadband throughout their districts. There is bipartisan support to close the digital divide starting with the most precise, accurate data available for determining mobile wireless coverage as experienced by consumers.[14] As

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[12] "The Commission shall review competitive market conditions with respect to commercial mobile services and shall include in its annual report an analysis of those conditions." *See* 47 U.S.C. § 332(c)(1)(C).

[13] *Id*.

[14] *See* Wicker & Manchin April 2017 Letter (noting, "[r[esidents, first responders, businesses, public institutions, and travelers in rural areas need reliable mobile broadband access. To that end, collecting and using reliable, standardized coverage data are critical steps toward ensuring consumers in the most rural and remote communities have access to the comparable services that Congress mandated for Universal Service").

Chairman Blackburn recently noted, "we must accurately collect and aggregate data … but doing so is a fool's errand without precise data. This will ensure that private and federal investments are targeted at unserved areas."[15]

Unfortunately, many of the Commission's past *Reports* have failed to meet this standard. In fact, the Commission very rarely, and certainly not in recent years, reaches a formal finding of whether the wireless marketplace is effectively competitive, especially based on current, market-based data. The first seven *Reports*, and reports *Fourteen* through *Nineteen*, did not reach such a conclusion, but rather provided "an analysis and description of the [commercial mobile radio service] industry's competitive metrics and trends."[16] And even the handful of *Reports* that reached a conclusion were unsuccessful in garnering a competition law-based economic analysis. Specifically, the Commission has pointed to the "complexity of the mobile wireless ecosystem" as the reason for failing to take a thorough analysis,[17] but this is no excuse to ignore a statutory mandate. Fortunately, this FCC has an opportunity here to correct this failure to meet Congress' mandate, and tackle "the complexity of the various inter-related segments and services within the mobile wireless ecosystem," via a robust competition analysis.[18]

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[15] Opening Statement of Hon. Marsha Blackburn. Subcommittee on Communications and Technology, "Broadband: Deploying America's 21st Century Infrastructure" 115th Cong. (Mar. 21, 2017), *available at* http://docs.house.gov/meetings/IF/IF16/20170321/105740/HHRG-115-IF16-MState-B001243-20170321.pdf ("Chairman Blackburn Opening Statement").

[16] *See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*; *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Nineteenth Report, 31 FCC Rcd. 10534, ¶ 4 (WTB 2016) ("*Nineteenth Report*").

[17] *See id.* ¶ 4.

[18] *Id.*

B. A Rigorous Analysis is Necessary to Meet the Commission's Policy Objectives.

As Chairman Pai has recognized, "[h]istorically, the FCC had been a model for the use of economic analysis in federal policymaking. . .[b]ut despite this rich legacy, staff economists are not guaranteed a seat at the policy-making table."[19] CCA agrees. Indeed, the Commission should "always take economics seriously, because the alternative is regulation by anecdote. . . Otherwise, well-intentioned but unsound policies can become unintended barriers to growth and innovation."[20]

The Pai Administration is off to a good start with certain structural changes that focus on producing data-driven policy. CCA applauds the Chairman for creating the new Office of Economics and Data ("OED") which was empowered to "create a culture of economics at the FCC that supports big-picture thinking once again."[21] The analysis required for the FCC's upcoming *Report* is well-suited for the OED, which will be essential to managing the Commission's data resources, and conducting longer-term research on ways to improve the Commission's policies. To achieve the Chairman's worthy goals, the Commission here must conduct an economic-based and data-driven analysis of the mobile competition market.

C. The Time is Now for the Commission to Conduct a Rigorous Data Analysis.

As the mobile industry is on the brink of a major technological leap to 5G networks, now is the time to accurately measure the chasm between the connected and unconnected. Chairman Pai himself recently noted this: "*Now is the time to restore the place of economic analysis at the*

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[19] Ajit Pai, Chairman, FCC, Remarks at the Hudson Institute: The Importance of Economic Analysis at the FCC at 1-2 (Apr. 5, 2017) (emphasis added) ("*Hudson Institute Remarks*").

[20] *Id.* at 3.

[21] *Id.*

FCC."[22] The Chairman should immediately staff the Commission's new OED, so that it can act quickly to begin this important task. As a similar step in the right direction, CCA praises the Commission's introduction of its Broadband Deployment Advisory Committee ("BDAC") to facilitate infrastructure buildout.[23] To that end, the FCC must promptly staff the BDAC working groups, and move forward to foster industry collaboration and initiatives that will spur mobile broadband deployment in all areas of the United States.

III. THE COMMISSION'S EXAMINATION OF COMPETITION IN THE MOBILE WIRELESS MARKET SHOULD BEGIN WITH A TRADITIONAL MARKET POWER ANALYSIS

As the Commission has recognized, a traditional market power analysis will "protect consumers, promote competition, and stimulate innovation."[24] This analysis has been upheld on judicial review,[25] and is consistent with the approach used by "the [Department of Justice] and [Federal Trade Commission], and telecom regulators in other countries."[26] The Commission should ensure that demonstrable evidence is made available to its economists and analysts who undertake the market's review.

A. A Traditional Market Power Analysis Begins by Defining the Relevant Product and Geographic Markets.

A traditional market power analysis begins with a delineation of the relevant product and geographic markets, and then considers market characteristics including market shares; the

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[22] *Hudson Institute Remarks* at 1-2 (Apr. 5, 2017) (emphasis added).

[23] *See* FCC News Release, *FCC Chairman Ajit Pai Announces Broadband Deployment Advisory Committee Members, Working Groups, and Leadership* (rel. Apr. 6, 2017).

[24] *See, e.g.*, *Wireline Competition Bureau Seeks Comment on Applying the Qwest Phoenix Forbearance Order Analytic Framework in Similar Proceedings*, Public Notice, 25 FCC Rcd. 8013, 8013 (2010).

[25] *See, e.g.*, *Qwest Corp. v. FCC*, 689 F.3d 1214, 1221 (10th Cir. 2012).

[26] *Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona Metropolitan Statistical Area*, Memorandum Opinion and Order, 25 FCC Rcd. 8622, ¶ 37 (2010), *aff'd*, *Qwest Corp. v. FCC*, 689 F.3d 1214 (10th Cir. 2012) (internal citations omitted) ("*Qwest Order*").

potential for exercise of market power; and whether potential entry would be timely, likely, and sufficient to counteract the exercise of market power.[27] Accurate market definitions ensure a correct determination as to whether competition exists in a specific market. Basic competition and monopoly principles indicate that product and geographic markets that are too large require more competitive discipline because: (1) a monopoly power has attained, or has the dangerous probability of attaining, a high share of the relevant market; and, (2) there are barriers to entry that easily prohibit competitive entrants from counteracting the exercise of market power.[28] Given that the Commission itself recently recognized the lack of competition in many other contexts,[29] CCA encourages the Commission to employ a proper definition of mobile wireless markets, which is a narrower definition than that applied in past *Reports*.[30]

Next, the Commission must ensure that the relevant geographic market is targeted to employ a thorough examination of competition across the mobile market. According to past precedent, assessing market power is determined by examining whether a consumer would shift its demand to an alternative supplier of the service in question if such an alternative were available in the particular geographic area.[31] While the Commission has refrained from

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[27] *Qwest Order* ¶ 42; *Qwest Corp*, 689 F.3d at 1221; U.S. Department of Justice and Federal Trade Commission, *Horizontal Merger Guidelines*, § 4 (Aug. 19, 2010), http://www.justice.gov/atr/public/guidelines/hmg-2010.pdf ("*Merger Guidelines*").

[28] *See* U.S. Dept. of Justice, "Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act" (June 25, 2015), *available at* https://www.justice.gov/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-2. *See also Qwest Order* ¶ 42.

[29] *See Mobility Fund II Order* ¶¶ 1, 50-52.

[30] To determine whether two services belong in the same product market, the Commission should consider whether enough customers of a service would switch to a second service in response to an increase in price so as to render the price increase unprofitable, then the two services belong in the same product market. *See Quest Order* ¶ 56; *Merger Guidelines* at § 4 ("Market definition focuses solely on demand substitution factors, *i.e.*, on customers' ability and willingness to substitute away from one product to another in response to a price increase or a corresponding non-price change such as a reduction in product quality or service.").

[31] *See Quest Order* ¶ 42 n.142; *Merger Guidelines* at § 4.2.

delineating a certain number of participants in a market that render the area effectively competitive, past analysis has indicated that a "sufficient number" of "*significant* competitors" that provide the same retail service as their counterparts is necessary to meeting the "competitive" threshold.[32] If the Commission applies this same test in this context, the results will reveal what is already known: that many geographic markets in rural and remote parts of the country lack competition. In these instances, the Commission's job is easy: to declare these areas not competitive for mobile wireless service, and implement appropriate policies to ameliorate this divide.

B. The Commission Must Analyze Market Characteristics.

After defining the relevant product and geographic markets, the FCC must conduct a "thorough analysis . . . [that] considers market characteristics, including market shares."[33] This step analyzes factors such as market shares, concentration, demand elasticity, supply responsiveness, and cost structure.[34] The analysis often involves applying the Herfindahl-Hirschman Index ("HHI") of market concentration, calculated by summing the squares of the individual firms' market shares, giving proportionately greater weight to the larger market shares.[35] While the Commission has looked at HHIs in the past, it has done so in a much larger area than is appropriate in the mobile wireless context. Even when using economic areas as the geographic market (which is too large, as explained above), the Commission's past *Reports* have found many markets were highly concentrated,[36] but then failed to draw any conclusions from

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[32] *See Quest Order* ¶ 43 (emphasis added).

[33] *Id.* ¶ 28.

[34] *See id.* ¶ 42 n.144; *see also id.* ¶ 38 (explaining that barriers to entry are "key components of a traditional market power analysis"); *Merger Guidelines* at § 5.

[35] *Merger Guidelines* at § 5.3.

[36] *Nineteenth Report* ¶¶ 21-22.

those results. While market concentration and market share data are typically based on historical evidence, the analysis also considers reasonably predictable effects of recent or ongoing changes in market conditions, including market research and company announcements.[37] In past *Reports*, however, the Commission has relied almost exclusively on this type of information, which fails the rigorous demands of its policy objectives and U.S. competition laws.[38]

Turning to a review of the mobile wireless market for 2016, CCA applauds technology's evolution over the past year, and its members look forward to meeting consumers' insatiable demands for mobile wireless service. As an example, in 2016, mobile data traffic in the United States grew nearly two times faster than fixed IP-based traffic,[39] and the average smartphone generated 4,432 megabytes of mobile data traffic per month in 2016, up from 3,333 megabytes per month in 2015.[40] Data is likewise expected to grow by a Cumulative Annual Growth Rate ("CAGR") of 49% in the next three years.[41] And, the U.S. Department of Health and Human Services' Center for Disease Control and Prevention found that the second six months of 2016 was the first time that a majority of American homes had only mobile phones.[42] As

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[37] *Merger Guidelines* at § 5.2.

[38] *See supra*, Section II.

[39] *See* Cisco Visual Networking Index, "Global Mobile Data Traffic Forecast Update, 2016-2021," (Mar. 28, 2017), *available at* http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/mobile-white-paper-c11-520862.html ("Cisco Forecast").

[40] *Id*.

[41] *See* GSMA, The Mobile Economy: North America 2016 at 2, 11-12 (2017), *available at* https://www.gsmaintelligence.com/research/?file=28a21e457f1b516b804f8b0f6cef5815&download ("GSMA Mobile Economy").

[42] Stephen J. Blumberg and Julian V. Luke, *Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2016*, U.S. Department of Health and Human Services, National Center for Health Statistics (May 2017), *available at* https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless201705.pdf (also noting that "adults living in metropolitan areas (53%) were more likely than those living in non-metropolitan areas (47.0% to be living in wireless-only households").

demonstrated by these dynamic statistics, carriers' ability to continue to meet growing consumer demands will depend on Commission policies in the coming year.

While the market's evolution will undoubtedly color the FCC's analysis, the Commission also must consider the following facts and statistics for its upcoming *Report*. Applying the below data to an objective economic analysis of rural and remote areas of the United States will undermine claims that robust competition exists across and throughout the country.

i. ***Service Revenue & Market Share.*** Rounding out Fourth Quarter 2016, AT&T and Verizon continued to swallow competitors in service revenue and subscriber count. Specifically, the two largest nationwide providers continue to command 71% of service provider market shares by service revenue.[43] In an ongoing trend, Verizon led the pack with $16 million in combined service revenue for the Fourth Quarter of last year – nearly tripling the service revenues of competitors other than AT&T.[44] Likewise, AT&T secured nearly double the service revenue of that of its closest competitor.[45] Moreover, AT&T's and Verizon's shared subscriber count was nearly five times greater than that of a single competitor.[46] In fact, either AT&T's or Verizon's subscriber counts alone nearly outnumber all other competitors combined. While the market continues to evolve at a dynamic pace, the strength of the duopoly is likewise intensifying by their mammoth market share.

ii. ***Connections & Devices.*** Market saturation also is apparent when reviewing the year's connections and devices. Overall, AT&T rounded out the year with nearly 135,000 connected devices, trailing behind Verizon's total of about 141,000.[47] Combined, these numbers are four times that of the nearest competitor for the same Quarter.

iii. ***Financial Indicators.*** Once again, AT&T and Verizon outranked their competitors on financial indicators for year-end 2016. For Third Quarter 2016, AT&T and Verizon averaged $17 per sub/month, while Sprint and T-Mobile

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[43] *Nineteenth Report* ¶ 19.

[44] *See* FierceWireless, "How Verizon, AT&T, T-Mobile, Sprint and more stacked up in Q4 2016: The top 7 carriers" (Mar. 8, 2017), *available at* http://www.fiercewireless.com/wireless/how-verizon-at-t-t-mobile-sprint-and-more-stacked-up-q4-2016-top-7-carriers.

[45] *See id*.

[46] *See id*.

[47] *See* RCRWirelessNews, "Analyst Angle: How did Verizon, AT&T, T-Mobile and Sprint compare" (Mar. 1, 2017), *available at* http://www.rcrwireless.com/20170228/opinion/analyst-angle-how-did-verizon-att-t-mobile-and-sprint-compare-tag9.

improved their numbers to about $2.7 per sub/month.[48] Despite shorter-term, quarterly gains by other carriers, the vast financial delta between incumbents with wireline-based resources and other competitive carriers is significant, and cannot be addressed without targeted Commission intervention.[49]

iv. ***Market Concentration*.** As a final benchmark, the market cannot be considered competitive based on concentration.[50] The Commission's *Nineteenth Report* explains that "the size of a company relative to the total size of the industry" is a significant factor in determining market concentration.[51] Using this metric, the FCC found that year after year, regional service providers account for an increasingly small share of the market. For example, based on service revenues, the market share for regional service providers fell from close to 10% in 2012, to just 2% by year-end 2015.[52] Likewise, nationwide service providers continue to increase their share of overall industry subscribers/connections - from 66% in 2003, to nearly 99% by year-end 2015. Collectively, the market share of regional and local service providers has declined from about 34% over a decade ago, to just over 1% by year-end 2015.[53] Compounding this number in 2016 and early-2017, AT&T and Verizon continue to engage in secondary market transactions that dilute the competitive mobile landscape and result in a deluge of net subscribers, service revenue, and network resources. Since 2015, the FCC has not yet denied any of AT&T's requests for low-band spectrum,[54] and likewise

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[48] *See* Chetan Sharma Consulting, US Mobile Market Update – Q3 2016, *available at* http://www.chetansharma.com/publications/us-mobile-market-update-q3-2016/.

[49] *See* MarketRealist, "Why is Verizon's Wireless Service Revenue Still under Pressure?" (Apr. 4, 2017), *available at* http://marketrealist.com/2017/04/why-is-verizons-wireless-service-revenue-still-under-pressure/.

[50] According to the Commission's HHI analysis in the *Nineteenth Report*, the market remained "highly concentrated" at an HHI level of 3,111 – nearly 1,000 points over the "highly concentrated" benchmark at 2,500. *Nineteenth Report* ¶ 22.

[51] *Id.* ¶ 19.

[52] *Id.* ¶ 20.

[53] *Id.*

[54] *See, e.g., Wireless Telecommunications Bureau Assignment of License Authorization Applications, Transfer of Control of Licensee Applications, De Facto Transfer Lease Applications and Spectrum Manager Lease Notifications, Designated Entity Reportable Eligibility Event Applications, and Designated Entity Annual Reports Action,* Public Notice, Report No. 12246 (May 3, 2017) (consenting to AT&T's application to enter into a spectrum transaction with Lackawaxen Long Distance Company); *Wireless Telecommunications Bureau Assignment of License Authorization Applications, Transfer of Control of Licensee Applications, De Facto Transfer Lease Applications and Spectrum Manager Lease Notifications, Designated Entity Reportable Eligibility*, Public Notice, Report No. 12192 (Apr. 5, 2017) (accepting AT&T and Gigsky Mobile's request to enter into a long-term spectrum lease); *Wireless Telecommunications Bureau Assignment of License Authorization Applications, Transfer of Control of Licensee Applications, De Facto Transfer Lease Applications and Spectrum Manager Lease Notifications, Designated Entity Reportable Eligibility*, Public Notice, Report No. 12173 (Mar. 29, 2017) (consenting to AT&T and Manti Telephone Company's request to assign to AT&T a Lower 700 MHz B

continues to approve swaths of transactions that result in transfers of mid- and high- band spectrum resources, as well as wireline resources and media content.[55]

Block license); *Wireless Telecommunications Bureau Assignment of License Authorization Applications, Transfer of Control of Licensee Applications, De Facto Transfer Lease Applications and Spectrum Manager Lease Notifications, Designated Entity Reportable Eligibility*, Public Notice, Report No. 12107 (Mar. 1, 2017) (consenting to AT&T's applications to enter into spectrum transactions with Grand River Communications and Green Hills Area Cellular Telephone); *Wireless Telecommunications Bureau Assignment of License Authorization Applications, Transfer of Control of Licensee Applications, De Facto Transfer Lease Applications and Spectrum Manager Lease Notifications, Designated Entity Reportable Eligibility*, Public Notice, Report No. 12058 (Feb. 8, 2017) (accepting AT&T and Arctic Slope Telephone Assn. Cooperative *de facto* transfer leasing arrangement); *Application of AT&T Mobility Spectrum LLC and North Dakota Network Company*, Memorandum Opinion and Order, 32 FCC Rcd 163 (2017); *Applications of AT&T Inc. and United States Cellular Corporation*, Memorandum Opinion and Order, 32 FCC Rcd 52 (2017); *Application of AT&T Mobility Spectrum LLC and Fuego Wireless, LLC*, Memorandum Opinion and Order, 31 FCC Rcd 13389 (2016); *Application of New Cingular Wireless PCS, LLC and Qualcomm Incorporated*, Memorandum Opinion and Order, 31 FCC Rcd 13336 (2016); *Application of AT&T Mobility Spectrum LLC and Data-Max Wireless, LLC*, Memorandum Opinion and Order, 31 FCC Rcd 12662 (2016); *Application of AT&T Mobility Spectrum LLC and West Carolina Communications, LLC*, Memorandum Opinion and Order, 31 FCC Rcd 8664 (2016); *Applications of AT&T Mobility Spectrum LLC, Tampnet Inc., Tampnet Licensee LLC, Broadpoint License Co., LLC, and Broadpoint Wireless License Co., LLC, for Consent To Assign Licenses and Approval of Long-Term De Facto Transfer Spectrum Leasing Arrangements*, Memorandum Opinion and Order and Declaratory Ruling, 31 FCC Rcd 7890 (2016); *Application of New Cingular Wireless, PCS LLC and Farmers Telecommunications Corporation*, Memorandum Opinion and Order, 31 FCC Rcd 2207 (2016); *Applications of New Cingular Wireless PCS, LLC, Bluegrass Cellular, Inc. and Bluegrass Wireless LLC*, Memorandum Opinion and Order, 31 FCC Rcd 378 (2016); *Applications of AT&T Mobility Spectrum LLC and East Kentucky Network, LLC*, Memorandum Opinion and Order, 31 FCC Rcd 361 (2016); *Applications of AT&T Inc. and Cellular Properties, Inc.*, Memorandum Opinion and Order, 31 FCC Rcd 318 (2016); Application of AT&T Mobility Spectrum LLC and Texas RSA 7B3, L.P., d/b/a People's Wireless Services, Memorandum Opinion and Order, 31 FCC Rcd 169 (2016); *Application of New Cingular Wireless PCS, LLC and NEP Cellcorp, Inc.*, Memorandum Opinion and Order, 30 FCC Rcd 15702 (2015); *Application of AT&T Mobility Spectrum LLC and Agri-Valley Communications, Inc.*, Memorandum Opinion and Order, 30 FCC Rcd 15691 (2015); *Applications of AT&T Inc. and Pine Cellular Phones, Inc.*, Memorandum Opinion and Order, 30 FCC Rcd 14450 (2015); *Application of AT&T Mobility Spectrum LLC and Club 42CM Limited Partnership*, Memorandum Opinion and Order, 30 FCC Rcd 13055 (2015); *Application of AT&T Mobility Spectrum LLC and Consolidated Telephone Co.*, Memorandum Opinion and Order, 30 FCC Rcd 9797 (2015); *Applications of AT&T Mobility Puerto Rico Inc. and Worldcall Inc.*, Memorandum Opinion and Order, 30 FCC Rcd 9763 (2015); *Application of AT&T Mobility Spectrum LLC and Kaplan Telephone Company, Inc.*, Memorandum Opinion and Order, 30 FCC Rcd 8502 (2015); *Applications of AT&T Inc., Plateau Telecommunications, Inc., et al.*, Memorandum Opinion and Order, 30 FCC Rcd 5107 (2015).

[55] *See, e.g.*, AT&T Newsroom, AT&T to Acquire StraightPath (Apr. 10, 2017), *available at* http://about.att.com/story/att_to_acquire_straight_path.html; FierceWireless, AT&T quietly acquires FiberTower for 24, 39 GHz spectrum" (Feb. 1, 2017), *available at* http://www.fiercewireless.com/wireless/at-t-quietly-acquires-fibertower-for-24-39-ghz-spectrum; Fortune, "Don't Expect the FCC to Review AT&T's Bid for Time Warner" (Feb. 27, 2017), *available at* http://fortune.com/2017/02/27/att-time-warner-fcc-review/; Business Insider, "AOL and Yahoo plan to call themselves by a new name after the Verizon deal closes: Oath" (Apr. 3, 2017), *available at* http://www.businessinsider.com/aol-and-yahoo-will-become-oath-after-merger-closes-2017-4;

> Similarly, Verizon has proposed multiple transactions in the last year involving a wide variety of spectrum assets.[56] The Commission must closely review these transactions, and mitigate subsequent competitive harms that continue to plague the market.

Better data is vital to assessing the market's competitiveness, without over-burdening wireless carriers. Rather than perform a general analysis, CCA encourages the Commission to carefully review all aspects of the mobile wireless market and thoroughly decipher those markets ripe for targeted intervention.

C. The Commission Must Ensure It Has Accurate Data to Perform a Market Power Analysis.

The need for accurate data and analysis is an uncontroverted, bipartisan principle under current leadership at the FCC. Chairman Pai has recognized the flawed data that the FCC too often relies on in its proceedings: "The FCC has often used data poorly. There's a real opportunity to do better, both in how the data are collected, and how data are applied to make the best, most informed decisions possible."[57] Additionally, Commissioner O'Rielly has urged that it is the Commission's obligation to "use data to inform and evaluate programs and policies to

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FierceTelecom, "Verizon signs $1.1B fiber purchase agreement with Corning" (Apr. 18, 2017), *available at* http://www.fiercetelecom.com/telecom/verizon-signs-1-1b-fiber-purchase-agreement-corning-supports-wireline-wireless-broadband; and *Application of XO Holdings and Verizon Communications Inc.*, WC Docket No. 16-70, Memorandum Opinion and Order (rel. Nov. 16, 2016) ("Verizon/XO Order").

[56] *See, e.g.*, *Wireless Telecommunications Bureau Assignment of License Authorization Applications, Transfer of Control of Licensee Applications, De Facto Transfer Lease Applications and Spectrum Manager Lease Notifications, Designated Entity Reportable Eligibility*, Public Notice, Report No. 12204 (Apr. 12, 2017) (Consenting to Assignment from SprintCom, Inc. to Cellco Partnership); *Wireless Telecommunications Bureau Assignment of License Authorization Applications, Transfer of Control of Licensee Applications, De Facto Transfer Lease Applications and Spectrum Manager Lease Notifications, Designated Entity Reportable Eligibility*, Public Notice, Report No. 12058 (Feb. 8, 2017) (Consummating Transfer of Control of AT&T Mobility Spectrum, LLC to Cellco Partnership).

[57] *Hudson Institute Remarks* at 4.

make them more effective."[58] And Commissioner Clyburn joined Senator Joe Manchin (D-WV) highlighting that "[w]e must use the best data available in order to implement common-sense principles that can get us the most bang for our buck."[59]

Congress also agrees that accurate wireless data is needed to effectively analyze the market and implement common-sense solutions for closing the digital divide: "We must cut through red tape by streamlining permitting processes and implement accurate availability data in order to solve the broadband dilemma . . . ."[60] To address this issue, there is currently legislation before the House of Representatives, H.R. 1546 The Rural Wireless Act of 2017, introduced by Dave Loebsack (D-IA) which would direct the FCC to establish a methodology for mobile wireless coverage data that reflects actual consumer connectivity experience. As Congressman Loebsack has stated, "We can't invest in wireless access without accurately understanding the problem. Not only does building out wireless access create jobs, but it is necessary for our rural communities to thrive and be competitive in the 21st Century." The legislation calls for sound data as the fundamental foundation for closing the digital divide and enabling an economic future throughout every sector of modern life.

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[58] Michael O'Rielly, Commissioner, FCC, Remarks at TPRC 44: Research Conference on Communications, Information and Internet Policy at 2 (Sept. 30, 2016).

[59] Joe Manchin & Mignon Clyburn, "Bridging the Broadband Divide: Making Mobility Fund Phase II a Reality" (Jan. 25, 2017), *available at* https://morningconsult.com/opinions/bridging-broadband-divide-making-mobility-fund-phase-ii-reality/.

[60] *See* Chairman Blackburn Opening Statement at 1. *See also*, Wicker & Manchin April 2017 Letter; *and* Letter from Joe Manchin, U.S. Senator, to Tom Wheeler, Chairman, FCC (Mar. 1, 2016) (noting that "[w]e, along with many of our colleagues, expressed our frustration with the inability of the Federal Communications Commission (FCC) to accurately measure mobile broadband coverage available to consumers, especially in rural areas. There is an obvious disconnect between official FCC statistics and our own and our constituents' real-world experiences, and we urge you to work with stakeholders to identify more accurate ways to measure available mobile wireless coverage").

In seeking to advance these principles, the Commission recently acknowledged flawed data available to the FCC and set up a challenge process in the *Mobility Fund II Order* to help standardize its information.[61] As the Commission itself determined, Form 477 data supports, at best, "coverage *estimates*," and in any event, shapefiles that are the subject of recent debate "do not indicate the extent to which providers affirmatively offer service to residents in the covered areas."[62] While Form 477 data may be the best data source it has available to evaluate the presence of mobile wireless competition, this data does not provide the level of detail nor standardization necessary to perform a sustainable market analysis, and should not be relied upon.

Moreover, under the White House's Office of Management and Budget ("OMB") and the Commission's own Information Quality Act ("IQA") guidelines, the Commission must ensure the "quality, objectivity, utility, and integrity of information (including statistical information) disseminated by" the agency.[63] The Commission must apply heightened standards for "influential scientific, financial, or statistical information" that has a "clear and substantial impact on important public policies," or on "important private sector decisions," including the decisions that carriers must make regarding their existing facilities and future network expansion

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[61] Ajit Pai, Chairman, FCC, Statement, *Connect America Fund*, WC Docket No. 10-90; *Universal Service Reform –Mobility Fund*, WT Docket No. 10-208 (Mar. 7, 2017) ("we seek public comment on establishing a robust challenge process for determining the set of areas eligible for bidding. This will allow parties to help ensure that our data about what's covered and what's not is accurate so we can target funding to the areas that lack service.")

[62] *Nineteenth Report* ¶ 95.

[63] *Implementation of Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Pursuant to Section 515 of Public Law No. 105-554*, Notice of Information Quality Guidelines, 17 FCC Rcd. 19890, ¶ 5 (2002) ("*Information Quality Guidelines*") (requiring every FCC Bureau or Office to conduct a review for data "quality, objectivity, utility, and integrity").

plans.[64] OMB guidelines adopted pursuant to the IQA also require the FCC to submit all influential scientific information on which it relies in this proceeding for peer review "by qualified specialists before it is disseminated."[65] Form 477 mobile coverage data lacks quality, objectivity, utility, and integrity, as it provides an inherently unreliable account of mobile broadband coverage, particularly in rural areas. Thus, Congress, the IQA, OMB guidelines, and the Commission's own guidelines on data quality straightforwardly prohibit reliance on Form 477 data alone in this proceeding. The Commission must begin with concrete, factual data to adequately address gaps in effective competition across the mobile wireless market.

D. Recent Commission Decisions Recognize That There is Not Nationwide Service – Much Less Competition – Throughout the Mobile Wireless Ecosystem.

Throughout 2017, the Commission already has acknowledged the lack of fervent competition throughout the entirety of the mobile wireless ecosystem. The upcoming *Report* is an opportunity to close these digital divides, and focus on pro-competitive policies to foster universal service for all consumers.

First, the *Mobility Fund II Order* is premised on an inherent lack of ubiquitous wireless service throughout the United States. Indeed, the *Mobility Fund II Order* was adopted to address the "rural and high-cost areas of our country [that] have been left behind."[66] Far from achieving robust competition, many parts of the country still do not have access to any mobile wireless service. The Commission recognized this in March of this year, and directed $4.53 billion over

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[64] *Information Quality Guidelines* at app. A § II(6); Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, 67 Fed. Reg. 8452 at 8452, 8460 (Feb. 22, 2002).

[65] Office of Management and Budget, Executive Office of the President, Final Information Quality Bulletin for Peer Review, at 2 (Dec. 16, 2004), *available at* http://www.cio.noaa.gov/services_programs/pdfs/OMB_Peer_Review_Bulletin_m05-03.pdf.

[66] *Mobility Fund II Order* ¶ 1.

the next decade to close "coverage gaps." Notably, the Commission decided to fund only one provider per service area based on the premise that many areas "are challenging for even one to serve."[67]

Similarly, the 600 MHz incentive auction was implemented to create more spectrum and fill gaps in wireless competition.[68] The Commission perceptively noted that "[o]ur country faces a major challenge to ensure that the speed, capacity, and accessibility of our wireless networks keeps pace with these demands in the years ahead, so the networks can support the critical economic, public safety, health care, and other activities that increasingly rely on them."[69] As a result, the "600 MHz Band Plan" was implemented to "promote competition and innovation by creating opportunities for multiple license winners and for future as well as current wireless technologies."[70] Additionally, the Commission astutely employed a spectrum reserve,[71] a market-based mechanism that provided greater access to critical low-band resources, without the threat of market dominance thwarting competition. By stimulating interest and increasing participation, the spectrum reserve arguably increased auction pricing above what it might otherwise have been.[72]

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[67] *Id.* ¶ 82.

[68] *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd. 6567, ¶ 1 (2014) ("*Incentive Auction Report and Order*").

[69] *Id.* ¶ 1.

[70] *Id.* ¶ 5.

[71] Rebecca Murphy Thompson & Courtney Neville, "600 MHz Incentive Auction Reserve," CCA Blog (Mar. 8, 2017), *available at* https://ccamobile.org/cca-blog/600-mhz-incentive-auction-reserve/9123090.

[72] *Id.*

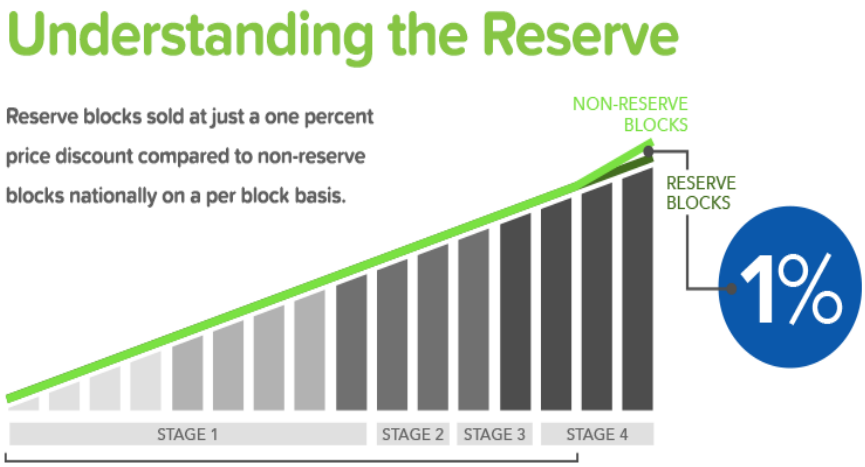

Figure 2. Understanding the spectrum reserve blocks sold at the Incentive Auction. Source: T-Mobile, 2017.

The Commission should seize the opportunity to build on these successes, and continue to implement targeted policies that promote competition throughout the wireless market.

IV. THE COMMISSION MUST FOSTER PRO-COMPETITIVE POLICIES DURING THIS TRANSITIONAL PERIOD

The wireless industry is on the brink of a tectonic technological shift. While many carriers in rural areas still maintain 2G networks, other wireless providers are currently transitioning from 3G to 4G networks and other providers are turning down their 2G and 3G networks altogether. Similarly, some carriers are looking forward to deployment 5G next-generation technologies.[73] This year, the Commission has unveiled significant proposals to reform the mobile wireless industry. First, the Commission recently introduced two items to

[73] *See, e.g.*, Karl Bode, Charter Conducting 28 GHz Band 5G Wireless Trials in Florida, DSL Reports (Apr. 10, 2017), http://www.dslreports.com/shownews/Charter-Conducting-28-GHz-Band-5G-Wireless-Trials-in-Florida-139325; *see also* TelecomsTech, Ericsson and SoftBank to conduct 5G trials on 28GHz spectrum (Mar. 27, 2017), https://www.telecomstechnews.com/news/2017/mar/27/ericsson-and-softbank-conduct-5g-trials-28ghz-spectrum/; C Spire, https://www.cspire.com/company_info/about/news_detail.jsp?entryId=26700006.

reform its wireless and wireline infrastructure policies, as discussed in more detail below. Additionally, the Commission is about to distribute nearly $5 billion in funds over the next ten years for mobile broadband deployment, and it must do so in a way that accurately bridges the digital divide in areas where service is most needed. Industry likewise is on a tipping point towards further consolidation, and accurate data will better enable the Commission's review of secondary market transactions involving the transfer of spectrum, wireline, and media resources.

As explained, a traditional market power analysis of the mobile wireless markets will provide a sound basis for future Commission policy decisions. Once the FCC understands where competition is lacking, it can better determine what regulations are necessary to promote growth. CCA's reform recommendations below and in other proceedings are critical to deploying competitive services. As the Commission knows, it is often competitive providers that are willing to deploy services in the most remote parts of the country. Therefore, supporting competitive carriers is necessary to ensure all Americans have access to ubiquitous mobile broadband services.

A. The Industry is in a Period of Transition.

The Commission has recently initiated bold reforms to achieve nationwide mobile wireless service and competition, and to assist industry parties on the cusp of transition to next generation networks.

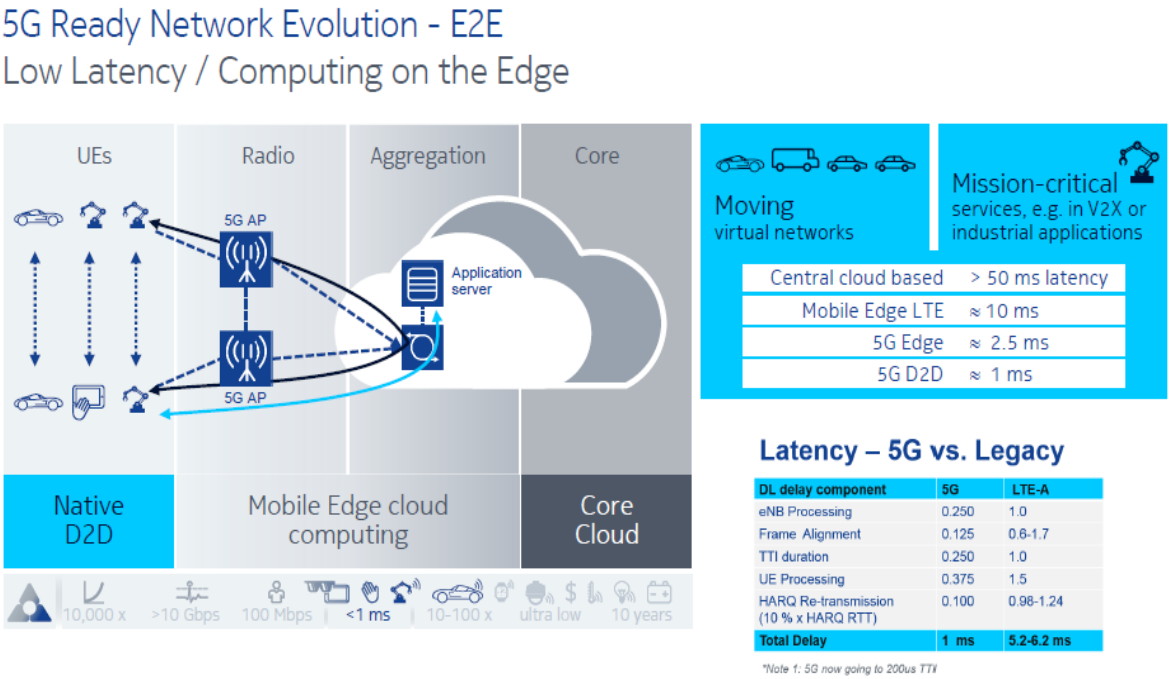

Figure 3. 5G network evolution across platforms.
Source: Nokia, 2017.

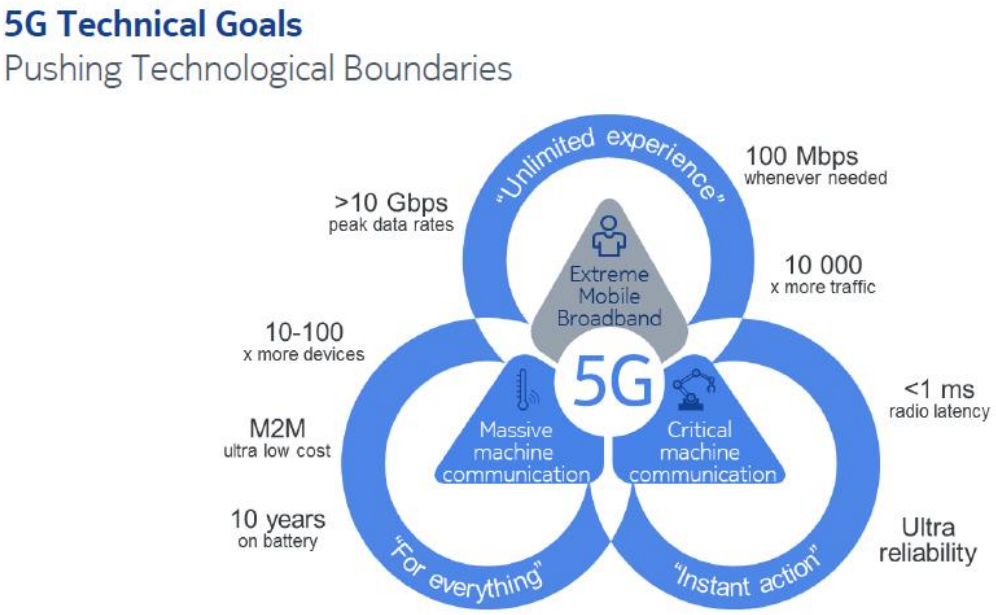

Figure 4. 5G technical goals across platforms.
Source: Nokia, 2017.

As industry and technology evolve, the FCC must implement targeted policies to promote competition and innovation.

Additionally, as noted above, the Commission recently released its *Wireless Infrastructure NPRM* and *Wireline Infrastructure NPRM*, which seek to inspire deployment of next-generation wireless broadband.[74] The Commission acknowledges that there is an "urgent need" to reform its network buildout policies to allow carriers to meet consumers' increasing service demands.[75] In that same vein, the capacity needed for 5G connections "will depend… on having an updated regulatory framework that promotes and facilitates next generation network infrastructure facility deployment."[76] CCA applauds the Commission's release of these items in the wake of the Chairman's appointment of members to the BDAC. This represents a prime opportunity to ameliorate infrastructure barriers that effectively reinforce the digital divide. CCA encourages the FCC to promptly seek comment on its proposals and implement the BDAC's mission.

Likewise, the *Mobility Fund II Order and Connect America Fund II Order* set into motion new opportunities provided by Universal Service Funds allocated to areas where American consumers cannot access wireless services. The *Connect America Fund II ("CAF") Order*, adopted at the Commission's February Open Meeting, adopts rules for the CAF auction that will allow providers to compete for federal funds to expand broadband to unserved areas.[77] Further, the Commission recently adopted its *Mobility Fund II Order* which will allocate $4.5

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[74] *Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment*, Notice of Proposed Rulemaking and Notice of Inquiry, WT Docket 17-79 (rel. Apr. 21, 2017) ("Wireless Infrastructure NPRM"); *Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, Notice of Proposed Rulemaking, Notice of Inquiry, and Request for Comment, WC Docket No. 17-84 (rel. Apr. 21, 2017) ("Wireline Infrastructure NPRM").

[75] Wireless Infrastructure NPRM ¶ 2.

[76] *Id*. ¶ 1.

[77] FCC Press Release, *FCC Takes Next Steps Toward Expanding Rural Broadband Access* (rel. Feb. 23, 2017), *available at* http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0223/DOC-343606A1.pdf.

billion in funds over a ten-year term. This process will take time; buildout benchmarks begin three years from fund allocation, which will not take place until the FCC finalizes the data it will use to designate eligible areas and undertakes an auction to award funding. Carriers who receive funding through Mobility Fund II and CAF II will have to work quickly to build out networks and infrastructure needed to meet these benchmarks, and the Commission will not have a true sense of whether the system is achieving its stated goals and the impact on mobile wireless service competition until the benchmarks are met (or not).

The results of the 600 MHz incentive auction also will impact carriers' access to critical spectrum resources and mobile wireless competition as a whole. The auction just concluded, and carriers face lengthy build out requirements. It may be many years before the effects of the auction on wireless competition are known. In the interim, many carriers are moving towards deploying 5G and IoT technologies are rapidly evolving, creating uncertainty in the market that the FCC can actively address. Finally, the *Business Data Services Order* will significantly impact wireless carriers who have relied on special access for backhaul services. Tectonic regulatory shifts will follow once the *Order* takes effect, but the actual long-term impact of these changes will take time to assess by the rigorous, data-driven standard the Chairman espouses. Those competitive carriers that rely on special access are likely to face increased costs, which will impact their ability to deploy in new areas and may impact current service availability. On the other hand, special access alternatives may develop that provide more options to competitive carriers. Nevertheless, there will be a period of time before the Commission can assess the impact that the *Business Data Services Order* will have on mobile wireless service.

B. Pro-Competitive Policies Are More Important Than Ever.

Given these reforms, it is imperative that the Commission reduce barriers to deployment and adopt policies that promote competition. Failing to do so could hinder or obliterate the Commission's recent efforts. Without the pro-competitive policies suggested below, some carriers may reduce or discontinue service, and others may fail to meet build-out requirements. CCA therefore encourages the Commission to implement the following policies.

i. *Access to Spectrum*.

Competitive carriers must have access to low-, mid-, and high-band spectrum to deploy next-generation mobile broadband and, eventually, 5G networks. This will determine viability of smaller carriers as the demand for data increases.

First, with regard to the *Spectrum Frontiers* proceeding, the Commission should address CCA's Petition for Reconsideration in a manner that will free up more spectrum for exclusively licensed mobile use, while also protecting rural incumbents' rights in the LMDS band.[78] As CCA explained in detail in its Petition for Reconsideration, subdividing LMDS licenses and imposing new service requirements for each new license area will raise licensee costs far beyond what licensees reasonably expected when they purchased these licenses from the FCC; many competitive carriers will likely lose their licenses under the *Spectrum Frontiers Report and Order's* rules.[79] Competitive carriers use their LMDS licenses for point-to-point service, enabling broadband connectivity for local municipalities, schools and businesses.[80] These

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[78] *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services et al., GN Docket No. 14-177 et al.*, Report and Order and Further Notice of Proposed Rulemaking, FCC 16-89 (WTB 2016).

[79] Petition for Reconsideration of Competitive Carriers Association, GN Docket No. 14-177, et al., at 9-10 (filed Dec. 14, 2016).

[80] *See* Letter from Rebecca Murphy Thompson, EVP & General Counsel, CCA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177, et al. (filed May 2, 2017).

carriers should be able to realize the value of their investment in time, as new LMDS-friendly equipment is developed.

The Commission also should deny satellite operator attempts to compromise mobile carrier operational rights throughout GHz spectrum, but especially in the LMDS band. Satellite operators have asked the Commission to relax operating structures adopted in the *Spectrum Frontiers Report and Order* based on prospective benefits to rural America, but competitive carriers are already using this spectrum to bridge the digital divide throughout their rural and regional service footprints and have met buildout requirements for decades. Competitive carriers also are investing in engineering solutions to optimize LMDS spectrum use. The Commission should reward this risk and investment, especially considering the high likelihood that LMDS spectrum will be among the first to support 5G networks.[81]

While millimeter wave ("mmW") spectrum will be imperative to fostering next-generation technologies, these transmissions have a much shorter range than low-band spectrum. Carriers will therefore need a robust spectrum portfolio of low-band spectrum resources to achieve 5G success. The Commission's first ever 600 MHz incentive auction closed on March 30, 2017, with a gross revenue totaling nearly $20 billion.[82] In addition to the exceptional amount of money they received for the repack, broadcasters won $10.05 billion in revenue plus,

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[81] *See* Letter from Petra A. Vorwig, Senior Legal and Regulatory Counsel, SES Americom, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177, *et al.* (filed April 14, 2017) ("Satellite Broadband Operators Ex Parte"); *see also* Comments of Competitive Carriers Association, IBFS FILE NO. SAT-LOA-20160622-00058 (filed Dec. 1, 2016) (opposing Boeing's application to operate a non-geostationary satellite orbit ("NGSO") fixed satellite service ("FSS") system in the 37.5-42 GHz, 47.2-50.2 GHz and 50.4-51.4 GHz bands and alter rules properly addressed in the *Spectrum Frontiers* proceeding).

[82] *See* FCC, "The Incentive Auction: 'By the Numbers'" (Apr. 13, 2017).

for eligible broadcasters, $1.75 billion in reimbursement payments,[83] and the auction itself topped the charts in FCC auction history – garnering a whopping $19.8 billion in gross revenues, second only to the AWS-3 auction. And, the nearly $20 billion in gross revenue from the 600 MHz incentive auction is the capstone for an estimated total of about $66.5 billion in gross revenue generated by the 2012 Spectrum Act.[84]

Figure 5. Incentive Auction revenue distribution.
Source: T-Mobile, 2017.

With these fact in mind, the FCC should continue to ignore frivolous requests to extend the repacking timeframe – any delay would be a detriment to competition, the public interest and the economy.[85] CCA shares the FCC's commitment to ensure a successful 600 MHz incentive

[83] *See Incentive Auction Closing and Channel Reassignment Public Notice; the Broadcast Television Incentive Auction Closes; Reverse Auction and Forward Auction Results Announced; Final Television Band Channel Assignments Announced; Post-Auction Deadlines Announced*, Public Notice, DA 14-314, ¶ 2 (rel. Apr. 13, 2017).

[84] *See* Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, 126 Stat. 156 (2012) (the "2012 Spectrum Act").

[85] *See* Opposition to Petition for Reconsideration, Competitive Carriers Association, MB Docket No. 16-306, GN Docket No. 12-268 (filed Mar. 29, 2017) ("CCA Opposition").

auction from start to finish, and applauds the Commission's adopted transition schedule.[86] While the expeditious transition of spectrum to wireless use is key to future broadband deployment, the FCC's timeline also will provide an engine for economic stimulation and job opportunities across rural America, as evidenced by the graphic below. For these reasons, the FCC should promptly dismiss any attempts to introduce delay[87] and uncertainty in this process, and instead, complete the post-incentive auction transition within the statutorily-based timeline.[88]

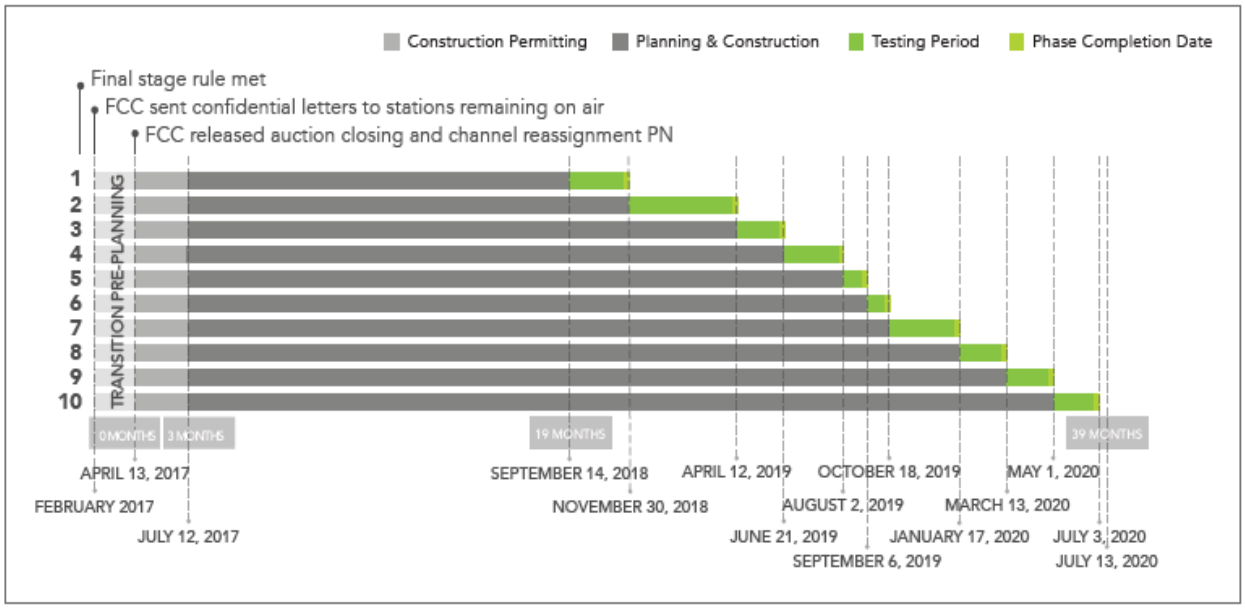

Figure 6. The FCC's 39-month transition plan to move 987 TV stations away from broadband spectrum.
Source: T-Mobile, 2017.

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[86] *See Incentive Auction Task Force and Media Bureau Adopt a Post-Incentive Auction Transition Scheduling Plan*, Public Notice, MB Docket No. 16-306, GN Docket No. 12-268, DA 17-107 (Jan. 27, 2017); *see also* 82 Fed. Reg. 11,106 (Feb. 17, 2017).

[87] *See, e.g.*, CCA Opposition; Petition for Reconsideration of the National Association of Broadcasters, GN Docket No. 12-268, MB Docket No. 16-306 (filed Mar. 17, 2017) ("Pet.").

[88] *See* 2012 Spectrum Act; *see also Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report & Order, 29 FCC Rcd 6567, 6796-802 ¶¶ 559-73 (2014) ("*Incentive Auction Order*") (establishing a 39-month post-auction transition period for broadcasters that are assigned new channels in the repacking process, which includes a three-month period during which broadcasters will complete and file their construction permit applications followed by a 36-month period consisting of varied construction deadlines). *See also Nat'l Ass'n of Broadcasters v. Fed. Commc'ns Comm'n*, 789 F.3d 165 (D.C. Cir. 2015) (upholding the FCC's 39-month transition period).

Further, the Commission should continue implementing proposals set forth in the Chairman's Digital Empowerment Agenda ("DEA"). As Chairman Pai recognizes, the benefits of wireless broadband in rural America are boundless, including the ability to make "America's farms more productive and efficient."[89] But carriers cannot make this future for success a reality without the proper spectrum resources. CCA supports the Chairman's proposal to create a "rural dividend" to supplement existing funding sources by setting aside 10% of the money raised from spectrum auctions for the deployment of mobile broadband in rural America.[90] Likewise, the Commission should consider extending initial license terms to fifteen years, coupled with reasonable enhanced buildout obligations. CCA cautions that a proposed initial buildout benchmark should be based on population benchmarks, rather than geography. This metric will ensure carriers with limited resources are able to acquire spectrum resources and comply with the FCC's updated mandates. With that in mind, CCA agrees that certainty of a longer license term could incentivize longer-term investments in rural and remote areas.

Additionally, the Commission should promote fair and flexible licensing policies in the 3.5 GHz band. In 2016, the FCC adopted an *Order on Reconsideration and Second Report and Order*, finalizing the rules governing the Citizens Broadband Radio Service ("CBRS") in the 3.5 GHz band and outlining protections for Fixed Satellite Service operations in adjacent bands.[91] CCA encourages the Commission to consider reevaluating the sharing methods and license terms adopted in the proceeding, and ensure its license sharing regime encourages a variety of carriers

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[89] Remarks of FCC Commissioner Ajit Pai, "A Digital Empowerment Agenda," The Brandery at 5 (Sept. 13, 2016), available at https://apps.fcc.gov/edocs_public/attachmatch/DOC-341210A1.pdf ("DEA").

[90] *Id*.

[91] *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Order on Reconsideration and Second Report and Order, FCC 16-55 ¶ 1 (2016) ("*Second Report and Order"*).

to utilize this band. The FCC can do this by initiating a rulemaking to change certain aspects of the *Order on Reconsideration and Second Report and Order* to make this spectrum more attractive to competitive carriers. CCA likewise reiterates that smaller geographic license areas are critical for rural and regional carriers to gain a fair opportunity to lease this spectrum in portions that match their existing territories

ii. *Infrastructure Deployment.*

It is time to update siting rules to account for new network construction paradigms and address longstanding inefficiencies.[92] There is momentum in Congress to address broadband infrastructure deployment constraints in an effort to improve connectivity for rural Americans. Senate Commerce Committee Chairman John Thune (R-SD) recently reaffirmed,

> Rural communities unfortunately often lag behind their urban counterparts due to more challenging geographies and lower population density. . . As we look at potential solutions, we must be mindful of the tremendous investment made to deploy these services and look for opportunities to help cut through red tape. . . To help foster more deployment, we must ensure the regulatory regime in place is reflective of these advances in technology.[93]

Working in concert with Congress, the Commission should work to streamline procedures for siting raised in the recent *Streamlining Public Notice* and both Wireless and Wireline items

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[92] *See, e.g.,* CCA Streamlining Comments at 29 (describing how many competitive carriers encounter delays because local codes do not properly differentiate between macro and small cells); *see also id.* at 32-34 (listing the many local moratoria on processing siting application, which operate to undermine the Commission's public interest mandate to expand broadband connectivity).

[93] Opening Statement of Chairman John Thune, Senate Commerce Committee Hearing "Investing in America's Broadband Infrastructure: Exploring Ways to Reduce Barriers to Deployment," 115th Cong. (May 3 2017).

adopted at the 2017 April Open Meeting.[94] Strong national siting standards are important to competitive carriers, who are severely taxed from both a capital and personnel perspective when forced to contend with varied siting rules between state and local authorities.[95] Infrastructure reform is often discussed in terms of paving the way for 5G network deployment, but the Commission should not overlook infrastructure as a mobile competition issue. Next to managing and acquiring quality spectrum, prudently managing infrastructure deployment is closely connected to a competitive carrier's longevity; CCA members are deeply engaged in the Commission's ongoing work to address these issues.[96]

Imposing reasonable restraints on state and local infrastructure-related fees, and adopting a "deemed granted" remedy for Section 332(c)(7) shot clocks, will allow competitive carriers to make a better business case for deployment and reduce incidents of exorbitant fees. It also will reduce, as is often the case, the need to lobby individual local authorities to, for example, adopt broadband-favorable rules. Broadband deployment is a public good, and while local authorities often resist a "one size fits all" solution, most industry requests for national standards are administrative and structural; competitive carriers do not seek to override local authority ability to ensure their jurisdictions are safe and well-managed.[97]

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[94] *See supra*, note 74.

[95] *See, e.g.*, CCA Streamlining Comments at 12, fn. 25 (explaining how certain counties in Virginia often fail to implement national rules, subjecting competitive carriers to "Special Use Permits" and public hearings); *see also id.* at 16-17 (describing now-stalled litigation between a competitive carrier and a southern city who imposed exorbitant right of way access fees on a "per foot" basis).

[96] *See ex parte* Letter from Steven K. Berry, President and CEO, CCA, *et al.*, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 17-83 (filed Apr. 20, 2017) (nineteen competitive carriers signed a letter ahead of the first BDAC meeting, urging the FCC and BDAC to consider competitive carriers' needs and interests when making siting recommendations).

[97] *See* 47 CFR 332(c)(A).

In addition to state and local barriers, the Commission should address in the short term the FCC's current framework for complying with the National Environmental Protection Act ("NEPA") and the National Historic Protection Act ("NHPA") to help foster certainty and opportunity for competitive carriers. As CCA and others noted in response to the *Streamlining Public Notice*, and as evidenced in the chart below, fees and delays related to historic review retard, and sometimes prohibit, deployment.[98] This presents competitive issues as CCA carrier members are simply less capable than dominant carriers of absorbing the cost associated with review delays and unpredictable fees. The administrative and legal costs of resolving any historic or environmental review dispute with the Commission often are exorbitant. Tribal fees, which have escalated sharply in recent years, are of particular concern.

[98] *See Comment Sought on Streamlining Deployment of Small Cell Infrastructure by Improving Wireless Facilities Siting Policies; Mobilitie, LLC Petition for Declaratory Ruling*, Public Notice, 31 FCC Rcd. 13, 360 (Wireless Telecomm. Bur. 2016) ("*Streamlining Public Notice*"); *see also* Comments of Competitive Carriers Association, WT Docket No. 16-421, et al., (filed Mar. 8, 2017) ("CCA Streamlining Comments"); Reply Comments of Competitive Carriers Association, WT Docket No. 16-421, et al., (filed Apr. 7, 2017) ("CCA Streamlining Reply Comments").

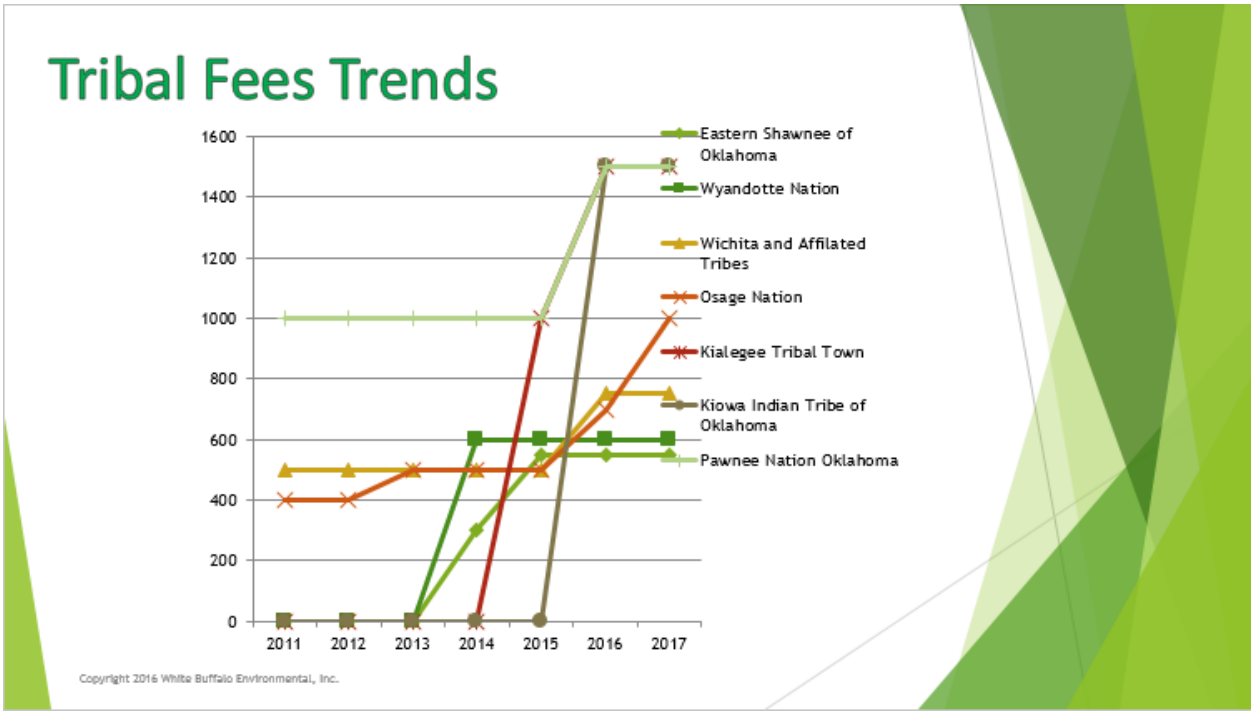

Figure 7. Tribal fees trend examples.
Source: White Buffalo Environmental, Inc., 2017.

Tribal Fees Trends

Tribe	2011	2012	2013	2014	2015	2016	2017
Ponca Tribe of Nebraska	NA	NA	NA	$200.00	$200.00	$200.00	$350.00
Iowa Tribe of Kansas and Nebraska	NA	NA	NA	NA	$300.00	$300.00	$300.00
Crow Tribe	NA	NA	NA	NA	$350.00	$350.00	$350.00
Shawnee Tribe	$50.00	$50.00	$50.00	$400.00	$400.00	$400.00	$400.00
Miami Tribe of Oklahoma	NA	NA	NA	$400.00	$400.00	$400.00	$400.00
Keweenaw Bay Indian Community	$50.00	$50.00	$50.00	$300.00	$500.00	$500.00	$500.00
Ponca Tribe of Indians of Oklahoma	NA	NA	NA	NA	$500.00	$500.00	$750.00
Absentee Shawnee Tribe of Indians of Oklahoma	NA	NA	NA	NA	$500.00	$500.00	$500.00
Omaha Tribe of Nebraska	NA	NA	NA	NA	NA	$500.00	$500.00
Eastern Shawnee of Oklahoma	NA	NA	NA	$300.00	$550.00	$550.00	$550.00
Wyandotte Nation	NA	NA	NA	$600.00	$600.00	$600.00	$600.00
Wichita and Affilated Tribes	$500.00	$500.00	$500.00	$500.00	$500.00	$750.00	$750.00
Osage Nation	$400.00	$400.00	$500.00	$500.00	$500.00	$700.00	$1,000.00
Kialegee Tribal Town	NA	NA	NA	NA	$1,000.00	$1,500.00	$1,500.00
Kiowa Indian Tribe of Oklahoma	NA	NA	NA	NA	NA	$1,500.00	$1,500.00
Pawnee Nation Oklahoma	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,500.00	$1,500.00
Total Fees:	$2,000.00	$2,000.00	$2,100.00	$4,200.00	$7,300.00	$10,750.00	$11,450.00

Copyright 2016 White Buffalo Environmental, Inc.

Figure 8. Tribal fees examples by tribe from 2011 to 2017.
Source: White Buffalo Environmental, Inc., 2017.

Accordingly, the Commission needs to clarify if, or when, paying fees issued by Tribal Nations is necessary for NHPA compliance.[99] The Commission also should address procedures surrounding incidents when Tribal Nations or State Historic Preservation Officers ("SHPOs") refuse to communicate with carriers, or withhold project approval (for example, agreeing that a project does not pose an "adverse effect") barring fee payment. Providing for these and other straightforward administrative backstops will enable competitive carriers to efficiently allocate deployment capital.

Siting on federal lands also is uniquely challenging for competitive carriers, and should be addressed by the Commission to the extent possible. The federal government owns roughly *one-third* of the land in the United States,[100] and competitive carriers typically lead the charge with respect to serving the rural and traditionally underserved communities proximal to federal lands. CCA is pleased that the BDAC *Streamlining Federal Lands* Working Group will issue policy recommendations by the end of the year. CCA encourages the Commission to promptly staff the remainder of the BDAC's working groups.[101]

CCA similarly supports S. 19, Making Opportunities for Broadband Investment and Limiting Excessive and Needless Obstacles to Wireless Act, or the MOBILE NOW Act. The

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[99] *See Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process*, Report and Order, 20 FCC Rcd. 1073 (rel. Sep. 9, 2004), *aff'd CTIA v. FCC*, 466 F.3d 105 (D.C. Cir. 2006) ("2004 NPA"); *see also Wireless Telecommunications Bureau Announces Execution of First Amendment to the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas*, Public Notice, DA 16-900, WT Docket No. 15-180 (rel. Aug. 8, 2016) ("2016 NPA"); 47 C.F.R. pt. 1 app. B; *see also Wireless Telecommunications Bureau Announces Execution of Programmatic Agreement with Respect to Collocating Wireless Antennas on Existing Structures*, Public Notice, 16 FCC Rcd. 5574 (WT 2001).

[100] *See* FCC, *Connecting America: The National Broadband Plan* at 115 (Mar. 17, 2010), *available at* https://www.fcc.gov/general/national-broadband-plan.

[101] *See* FCC News Release, *FCC Chairman Ajit Pai Announces Broadband Deployment Advisory Committee Members, Working Groups, and Leadership* (rel. Apr. 6, 2017).

MOBILE NOW Act would greatly contribute to streamlining federal siting and deployment policies, as well as repurposing federal spectrum for commercial use. Combined with FCC efforts, Congress is poised to provide relief to carriers seeking to serve the most challenging areas of the United States.

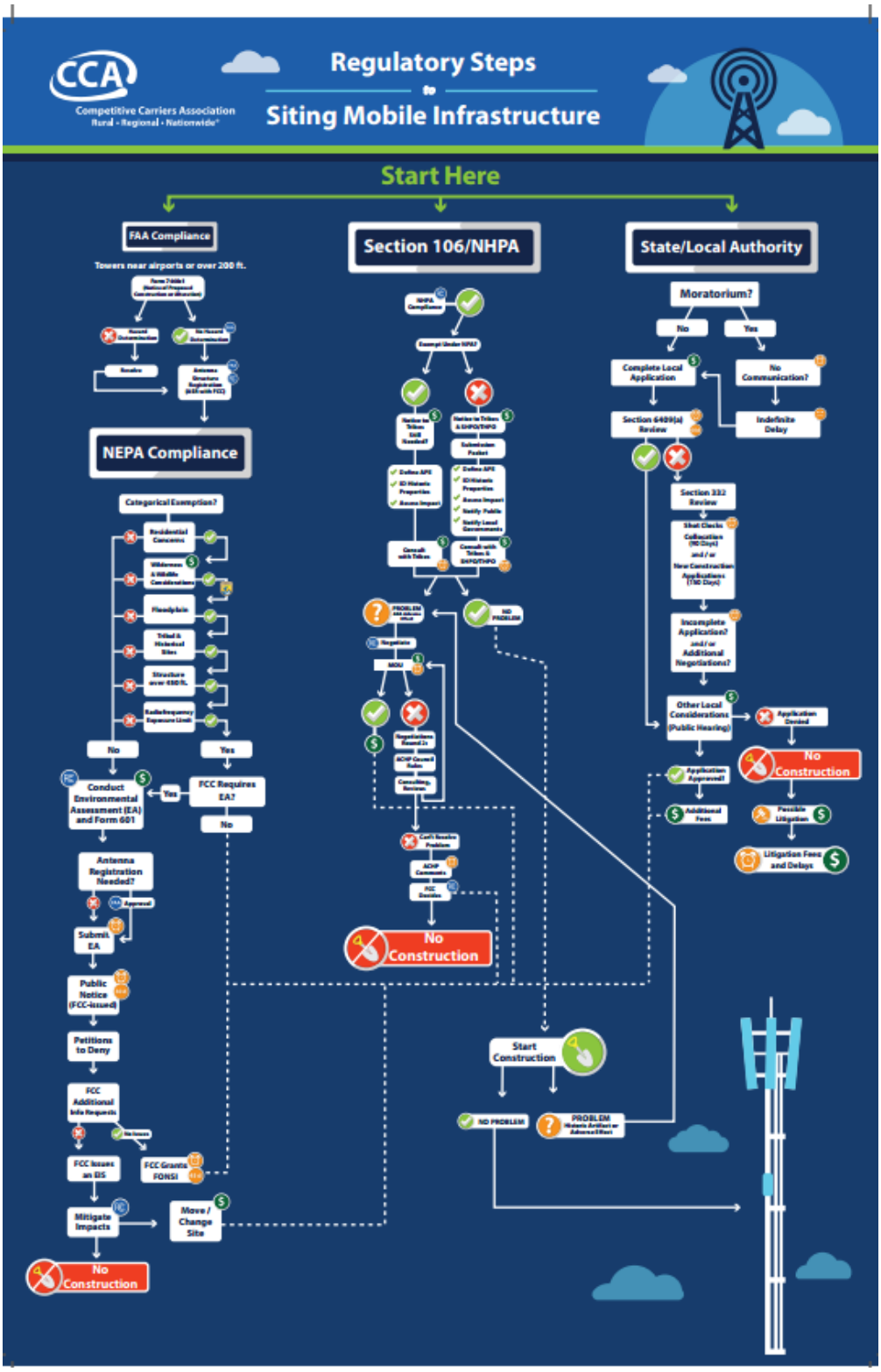

Figure 9. Regulatory Steps for Siting Mobile Broadband Infrastructure. Source: CCA, 2017.

iii. *Universal Service Fund Reform*.

Universal service is the third leg of a three-legged stool. In addition to spectrum and infrastructure access, Mobility Fund II is necessary for carriers to deploy, maintain, and upgrade mobile broadband networks in underserved and hard-to-serve areas. As Chairman Pai recognized in his DEA, "deploying broadband isn't easy. The Internet isn't an abstraction. It's a physical network of networks that requires massive investment to deploy and constant adjustment to manage."[102] CCA therefore applauds the Commission for adopting a *Report and Order*[103] that takes a substantial step toward expanding LTE coverage in hard-to-serve markets across the United States, and for seeking additional public input on elements of the Mobility Fund II challenge procedure in its *Further Notice*. CCA urges the Commission to adopt a challenge process that is efficient, eases burdens on smaller entities, and generates accurate determinations of where qualifying coverage exists and where Mobility Fund II must target support.[104]

To achieve this balance, the challenge process must place the ultimate burden of persuasion on challenged carriers who are best able to marshal evidence of qualifying coverage by their own networks.[105] The process also should be available to all parties interested in elevating the digital experience of rural and Tribal communities.[106] Those who have the greatest first-hand knowledge of local situations should not be excluded from the process of determining

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[102] DEA at 3.

[103] *Connect America Fund, Universal Service Reform – Mobility Fund*, Report and Order and Further Notice of Proposed Rulemaking, WC Docket Nos. 10-90 & 10-208 (Mar. 7, 2017) ("*Report and Order*" or "*Further Notice*").

[104] Comments of Competitive Carriers Association, WT Docket No. 10-208 et al. at 2 (filed Apr. 26, 2017) ("CCA Mobility Fund II Comments").

[105] *Id*. at 4.

[106] *Id*. at 9.

where additional build-out is most needed. Finally, to ensure that the challenge procedure remains robust and capable of improving on the accuracy of current coverage data, it should not be subject to a minimum challengeable area requirement.[107] By excluding areas based solely on their size, the FCC risks excluding coverage around important resources such as roads or agricultural operations.

Over the next ten years, the FCC will make approximately $4.53 billion available to fill coverage gaps, and it is imperative that the Commission make these decisions based on solid, accurate data. Congress and the Commission have continuously noted that a strong foundation based on data that accurately reflects consumers' on-the-ground experience is critical to advancing economic decisions for distribution of Mobility Fund II funds. As an initial matter, preliminary challenges should require certifications to a good faith belief of eligibility, and no more. Likewise, to be effective, propagation maps submitted by challenged carriers must be subject to specific conditions, including signal strength and resolution requirements. This will provide coverage determinations that reflect actual consumer experience and are conducted consistently across the country. Data submitted on "actual speeds" should include measurements of both speed and signal strength.[108]

CCA continues to work with industry and the Commission to implement a robust Mobility Fund II program.[109] That said, any process adopted by the FCC must include uniform

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[107] *Id*. at 8.

[108] *Id*. at 10-17.

[109] In that vein, CCA understands that the five largest carriers have crafted a third proposal delineating a one-time data collection method and subsequent challenge process. That said, any proposal adopted must include the factors mentioned above. *See* CCA Mobility Fund II Comments at 11; Comments of CTIA, WT Docket No. 10-208 et al. at 11 (filed Apr. 26, 2017) ("CTIA Mobility Fund II Comments").

standards and filing requirements.[110] First, the Reference Signal Received Power ("RSRP") level or some form of similar measurement should be standardized and clearly defined. As current Form 477 filings show, these results can be subjective and vary by equipment vendor and network design.

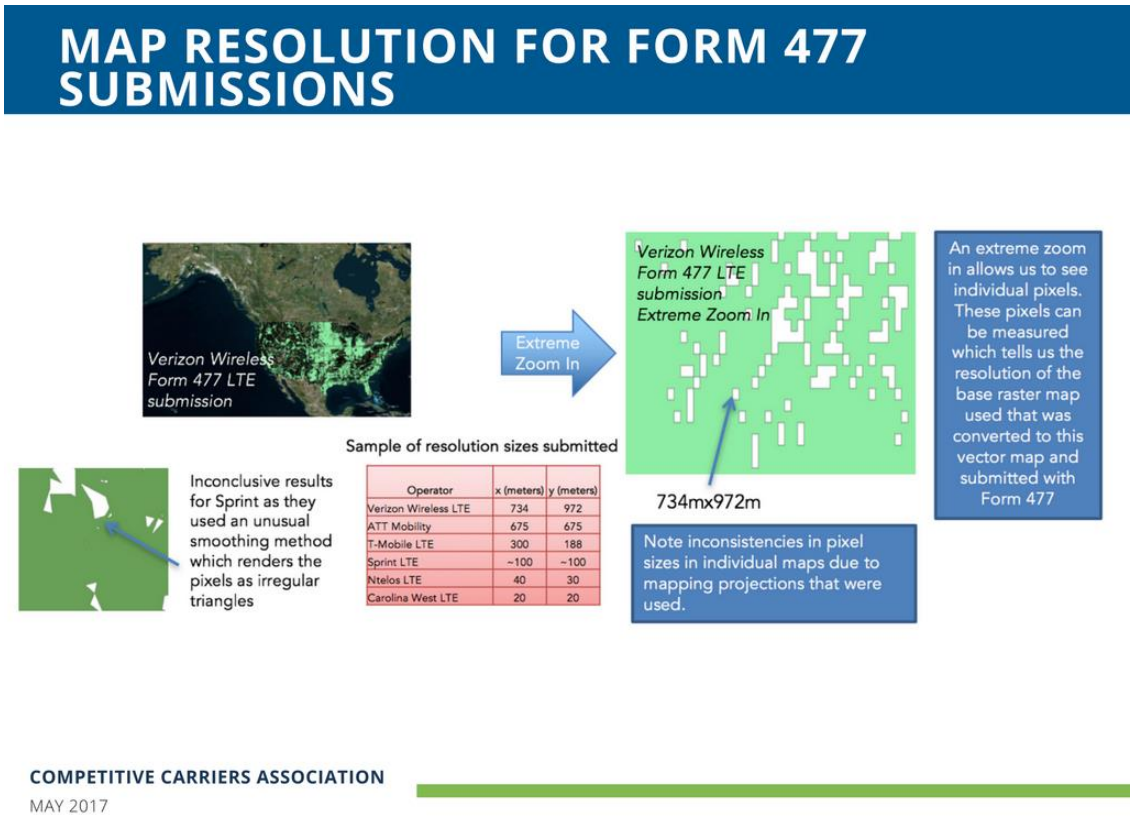

Figure 10. Map resolutions for Form 477 Submissions example.
Source: CCA, 2017.

Additionally, map files and/or data must be produced using a determined clutter factor, including clear indications of the precise loss values assigned to the clutter and feeder type. Likewise, bin sizes should be delineated and sufficiently high resolution. Like RSRP levels,

[110] *See* Letter from Trey Hanbury, Counsel to CCA, to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 12-264, WT Docket Nos. 16-137, 10-208, WC Docket No. 11-10 (filed Oct. 25, 2016), at 1 ("CCA October 25, 2016 Letter").

providers can employ a variety of techniques in their data sets, which threatens to dilute coverage for comparison purposes. Finally, Remote Radio Head ("RRH") power differences should be considered. It is possible that certain factors, like channel size, can enhance a provider's power and ultimately distort data when compared to other providers. Incorporating these standards will provide the Commission with a more robust coverage analysis across the United States.[111]

CCA also supports the Commission's interest in working with Congress to create tax incentives for wireless providers, especially credits that are rural-focused, to spur investment. Specifically, CCA applauds the proposals highlighted in Chairman Pai's DEA, including tax credits for startups in Gigabit Opportunity Zones[112] and commends Senator Shelley Moore Capito for putting some of these ideas into legislative language in the Gigabit Opportunity Act.[113] While CCA agrees that certain tax credits should be included to support expanding and upgrading broadband infrastructure, the Commission must be aware that, due to lack of competition in the certain markets, facilities in rural America may never be profitable because of low population and the high costs of serving these areas.[114] Policymakers should consider a range of options to support broadband services in rural America through updates to the tax code, including making Universal Service Fund ("USF") support tax exempt. In addition to direct

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[111] *Id*. at 11.

[112] DEA at 4, 10.

[113] Press Release, *Capito Introduces Legislation to Accelerate Broadband Access in Rural America* (May 3, 2017), https://www.capito.senate.gov/news/press-releases/capito-introduces-legislation-to-accelerate-broadband-access-in-rural-america.

[114] Testimony of Steven K. Berry, CCA, Before the House Energy and Commerce Committee Hearing "Broadband: Deploying America's 21st Century Infrastructure" at 6 (Mar. 10, 2017), *available at* http://docs.house.gov/meetings/IF/IF16/20170321/105740/HHRG-115-IF16-Wstate-BerryS-20170321.pdf.

support and tax incentives, CCA therefore supports preserving and expanding mobile broadband through utilizing bonus depreciation and/or immediate expensing.

Finally, the Commission should continue exploring options for contribution reform, as the current USF contribution base is not sustainable to meet the need for subsidies, particularly in rural areas. As noted above, CCA supports Chairman Pai's "rural dividend" proposal, but like tax relief, the dividend will not go far enough to support increasing demand in rural America for mobile services. The FCC must endeavor to expand the contribution base if it intends to achieve true universal service. Competitive carriers need certainty and support to extend their broadband deployments and facilitate greater competitive opportunities as the industry moves toward next generation technologies. Likewise, the contribution factor continues to rise, up from 16.7 to 17.4 in the Second Quarter of 2017.[115] This results in discriminatory contributions from wireless carriers who only receive a small amount of the payback.[116] Following recommendations from the Joint Board on Universal Service,[117] CCA will recommend that the Commission continue to explore options for contributions reform, including expanding the base where possible to reflect today's and tomorrow's network uses.

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[115] FCC, Contribution Factor & Quarterly Filings – Universal Service Fund Management Support, *available at* https://www.fcc.gov/general/contribution-factor-quarterly-filings-universal-service-fund-usf-management-support.

[116] *See* Comments of Competitive Carriers Association, WT Docket No. 16-137 at 29-30 (citing Universal Service Administrative Company, Contribution Factors 2016, *available at* http://usac.org/cont/tools/contribution-factors.aspx).

[117] In the *2015 Open Internet Order*, the FCC reiterated its decision to refer the question of how to modify universal service methodology to the Joint Board, which tasked the Joint Board to provide recommendations on how the Commission should modify universal service contributions, including "clarifying and modifying the Commission's rules on what services and service providers must contribute to the fund." The FCC requested the Joint Board to present its recommended decision no later than April 7, 2015. *See Protecting and Promoting the Open Internet*, Report and Order on Remand, Declaratory Ruling, and Order, FN Docket No. 14-28 ¶ 498, fn. 1471 (2015) ("*2015 Order*").

iv. *Industry Consolidation*.

The wireless market continues to consolidate, even as carriers attempt to navigate and deploy next-generation networks. Access to spectrum and content are increasingly threatened due to a rash of AT&T transactions to purchase smaller carriers with spectrum licenses, and media mergers initiated by AT&T and Verizon.

PENDING AT&T TRANSACTIONS
IMPLICATING LOW-BAND ENHANCED FACTOR REVIEW

SPECTRUM	MARKETS
700 MHz (B Block)	California 5 -- San Luis Obispo (CMA340) ; California 12 -- Kings (CMA347)
AWS, Cellular, 700 MHz (C Block), Microwave	New Mexico 2 - Colfax (CMA554) ; New Mexico 4 - Santa Fe (CMA556); Texas 3 - Parmer (CMA654)
700 MHz (C Block) & Cellular	Lafayette, LA (CMA 174); Louisiana 5 -- Beauregard (CMA 458)
700 MHz (C Block)	Kansas 14 -- Reno (CMA 441); Oklahoma 3 -- Grant (CMA 598) (partition)
Cellular, 700 MHz (B Block), Broadband PCS	South Dakota 5 -- Custer (CMA 638); South Dakota 6 -- Haakon (CMA 639); Wichita (MTA 046) (full and portion); Manhattan-Junction City, KS (BTA 275) Kansas City (MTA 034) (portion); Rapid City, SD (BTA 369) (portion)
700 MHz (B Block)	Puerto Rico 4 -- Aibonito (CMA 726) ; Puerto Rico 5 -- Ceiba (CMA 727)
700 MHz (C Block)	Minnesota 6 -- Hubbard (CMA 487) (partitions)
700 MHz (B and C Blocks), PCS Broadband	Arkansas 9 -- Polk (CMA 332); Fort Smith, AR-OK (CMA 165) Oklahoma 6 -- Seminole (CMA 601); Oklahoma 10 -- Haskell (CMA 605)
Cellular (A Block), Microwave	Illinois 7 -- Vermillion (CMA 400) ; Illinois 9 -- Clay (CMA 402) (portion)
700 MHz (C Block)	Huntington-Ashland, WV/KY/OH (CMA 110); Lexington-Fayette, KY (CMA 116); Kentucky 6 -- Madison (CMA 448)
700 MHz (B and C Blocks)	Saginaw-Bay City-Midland, MI (CMA 94); Muskegon, MI (CMA 181) Michigan 3 -- Emmet (CMA 474) ; Michigan 4 -- Cheboygan (CMA 475) ; Michigan 5 -- Menistee (CMA 476); Michigan 6 -- Roscommon (CMA 477); Michigan 7 -- Newaygo (CMA 478)
700 MHz (B Block) PCS Broadband (A Block)	Binghamton, NY (CMA 122); Susquehanna Co. and portions of Wayne Co. and Lackawana Co., PA (CMAs 56 and 616)
700 MHz (B and C Blocks)	Evansville, IN (CMA 119); Clarksville, TN (CMA 209); Owensboro, KY (CMA 293); Indiana 7 -- Owen (CMA 409) ; Indiana 8 -- Brown (CMA 410); Kentucky 2 -- Union (CMA 444) ; Kentucky 6 -- Madison (CMA 448); Kentucky 7 -- Trimble (CMA 449)
Cellular (A and B Blocks) AWS (B and C Blocks)	Gulf of Mexico (CMA 306) ; Gulf of Mexico (BEA 176)
700 MHz (C Block)	Longview-Marhsell, TX (CMA 206); Texas 7 - Fannin (CMA 658)
700 MHz (C Block)	Colorado 9 - Costilla (CMA 356)
700 MHz (C Block)	Alabama 2 - Jackson (CMA 308)

SPECTRUM	MARKETS
700 MHz (B Block)	Anderson, SC (CMA 227) South Carolina 2 - Laurens (CMA 626)
700 MHz (B Block)	Arizona 1 - Mohave (CMA 318)
700 MHz (B Block)	New Jersey 1 - Hunterdon
700 MHz (C Block)	Leavenworth Co., KS (partition of CMA 432)
700 MHz (B and C Blocks)	Las Cruces, NM (CMA 285) New Mexico 3 - Catron (CMA 555) New Mexico 4 - Santa Fe (CMA 556) New Mexico 6 - Lincoln (CMA 558)
700 MHz (B and C Blocks); Broadband PCS, AWS	To AT&T entities Champaign-Urbana-Rantoul, IL (CMA 196) Anderson, IN (CMA 217) Kokomo, IN (CMA 271) Illinois 6 - Montgomery (CMA 399) Idaho 1 - Boundary (CMA 388) North Carolina 2 - Yancey (CMA 566) (partition) To US Cellular entities Springfield, IL-MO (BEA 097) (partition) Great Lakes (REA 003) (partition) Greensboro-Winston Salem-High Point, NC-VA (BEA 018) (partition) Raleigh-Durham-Chapel Hill, NC (BEA 019) (partition) Longview, WA (BTA 261)
700 MHz (C Block)	Colorado 8 - Kiowa (CMA 355)
700 MHz (C Block)	North Dakota 2 - Bottineau (submarket 1) (CMA 581)
700 MHz (C Block)	Alaska 1 - Wade Hampton (CMA 315) (portion)
700 MHz (C Block)	Missouri 4 - DeKalb (CMA 507) (portion)
700 MHz (C Block)	Missouri 4 - DeKalb (CMA 507) (portion)
700 MHz (C Block)	Texas 2 - Hansford (CMA 653) (submarket 1)
700 MHz (B Block)	Utah 3 - Juab (CMA 675)
700 MHz (B Block)	Virgin Islands 1 - St. Thomas (CMA 730) Virgin Islands 2 - St. Croix (CMA 731)
700 MHz (C Block)	Pennsylvania 5 - Wayne (CMA 616)
Cellular	Georgia 4- Jasper (CMA 374)
700 MHz (C Block)	See above
700 MHz (B and C Blocks)	Fargo-Moorhead, ND-MN (CMA 221) North Dakota 3 - Barnes (CMA 582) (submarkets 1 and 6)

COMPETITIVE CARRIERS ASSOCIATION
MAY 2017

Figure 11. Pending AT&T transactions implementing low-band enhanced factor review. Source: CCA, 2017.

The largest carriers' vast low-band spectrum holdings compounded with spectrum obtained through their secondary market transactions strengthens the duopoly and decreases competition.

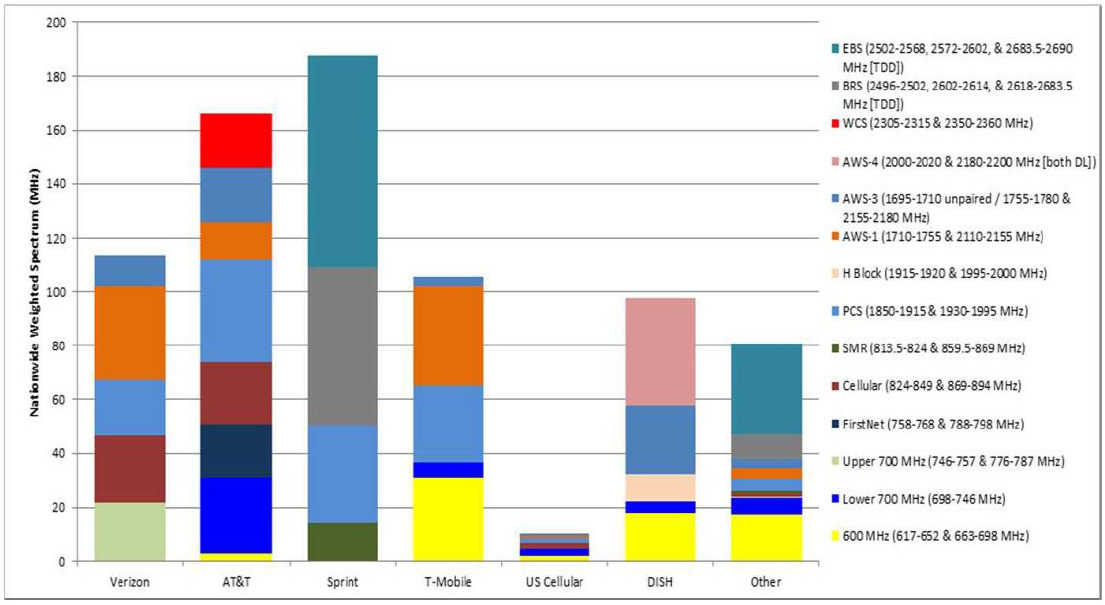

Figure 12. Spectrum holdings among major wireless providers after the Incentive Auction. Source: T-Mobile, 2017.

In addition to the increasing spectrum crunch, the Commission should consider the potentially harmful effects of these mergers in the larger context, as AT&T and Verizon continue to acquire spectrum and other critical wireline and media resources on the secondary market. Since the advent of cellular service in the early 1970s, the industry has continually consolidated among Verizon and AT&T.

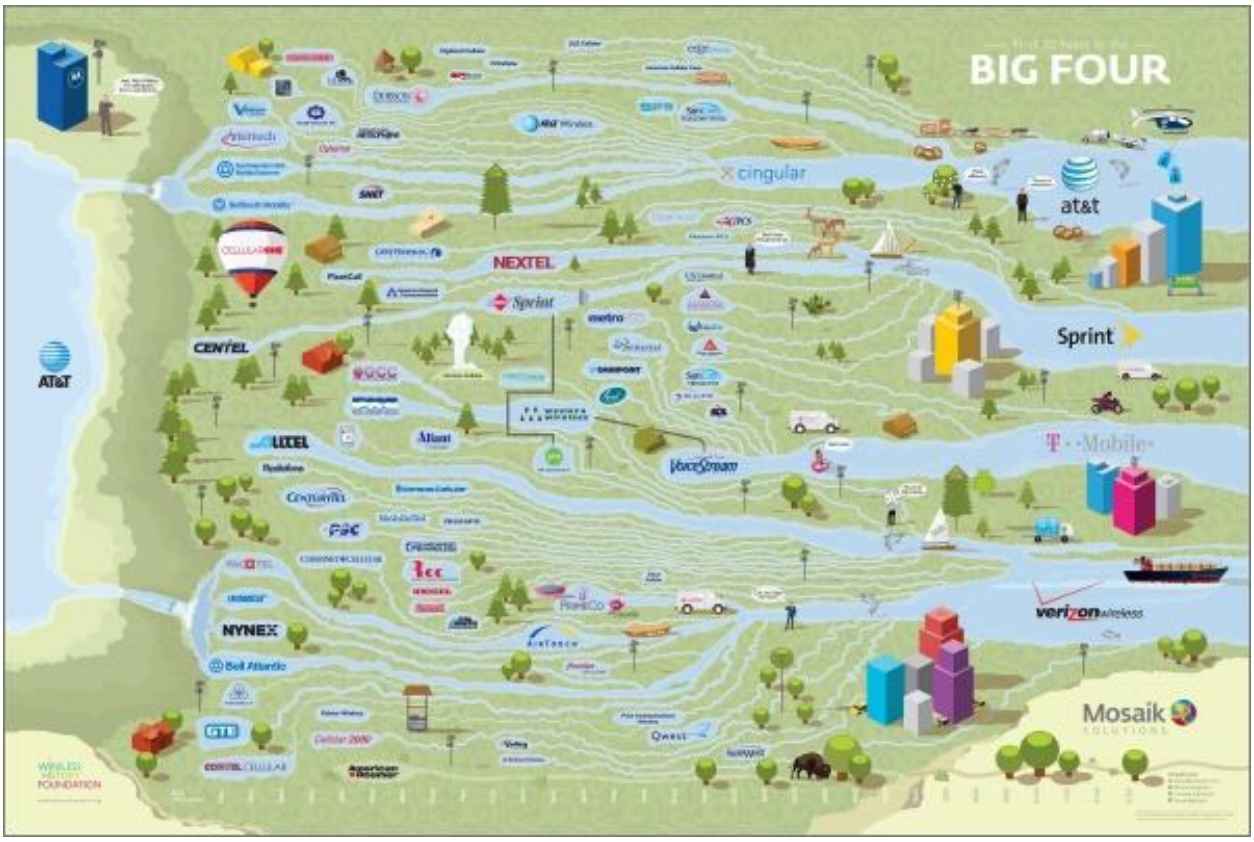

Figure 13. Wireless industry evolution map.
Source: Mosaik, 2013.

First, the Commission should not approve transactions that will saturate the mid- and high- band spectrum bands before their potential for 5G services is fully realized. Indeed, AT&T recently demonstrated the value of mmW licenses by agreeing to pay Straight Path $1.6 billion for its mmW portfolio, rich with 28 GHz and 39 GHz spectrum, earlier this year.[118] Verizon is reportedly also vying to purchase Straight Path and may undermine the sale to AT&T.[119]

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[118] *See* Scott Moritz, *AT&T Buys Straight Path in $1.6 Billion Deal for 5G Arsenal*, BLOOMBERG TECHNOLOGY (Apr.10, 2017), *available at* https://www.bloomberg.com/news/articles/2017-04-10/at-t-to-acquire-straight-path-in-deal-valued-at-1-6-billion.

[119] *See* Aaron Pressman, *Bidding War Gets Even Hotter for Tiny Straight Path*, FORTUNE (May 3, 2017), http://fortune.com/2017/05/03/straight-path-att-verizon/; *and* Business Wire, "Straight Path Board Determines that a Revised Offer from a Multi-National Telecommunications Company to Acquire Straight Path for $184.00 Per Share Constitutes a 'Superior Proposal'" (May 8, 2017), *available at* https://seekingalpha.com/pr/16823983-straight-path-board-determines-revised-offer-multi-national-telecommunications-company.

Nevertheless, if either party successfully acquires Straight Path, vast swaths of 5G-viable spectrum will transfer to a dominant incumbent provider. Verizon acquired XO Communications ("XO") last year and is leasing XO's 28 GHz and 39 GHz spectrum; if it successfully absorbs Straight Path, Verizon's spectrum holdings will surpass the 1250 MHz spectrum threshold limit adopted in the *Spectrum Frontiers Report and Order*[120] in most of the 25 major markets nationwide.

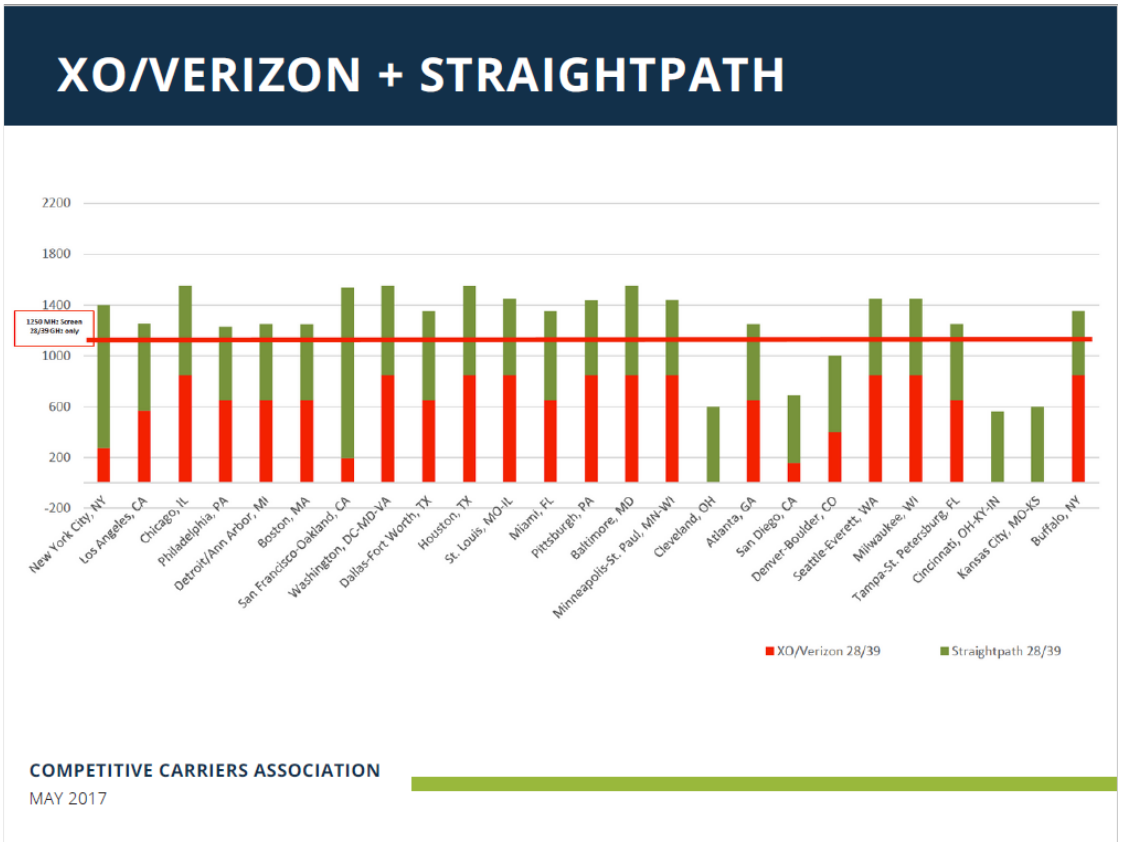

Figure 14. Potential increases in 28 GHz and 39 GHz spectrum holdings in top 25 markets if Verizon acquires Straight Path.
Source: CCA, 2017.

[120] *Spectrum Frontiers Report and Order* ¶¶ 184-189 (The Commission, for spectrum holding policies, grouped the 28 GHz, 37 GHz, and 39 GHz bands together and adopted a 1250 MHz holding limit to be applied both for competitive bidding in auction and for proposed secondary market transactions. Any secondary market transactions surpassing the 1250 MHz holding limit will be applied on a county-by-county basis. The Commission's analysis will include case-by-case review to analyze "potential competitive harms" and whether the transaction serves the public interest).

mmW HOLDING BY BAND

			Entity Name - VZ Merger / Band										
			AT&T			FCC		T-Mobile			Verizon		
CMA	CMA Name	CMA POPS	24GHz	39GHz	Total	39GHz	Total	28GHz	39GHz	Total	28GHz	39GHz	Total
1	New York, NY-NJ/Nassau-..	16545321	252	393	645	45	45	142	100	242	708	693	1,400
2	Los Angeles-Long Beach/A..	17053688	230	411	641	300	300	280		280	570	685	1,255
3	Chicago, IL	8316650	397	300	697	399	399				850	700	1,550
4	Philadelphia, PA	5259673	320	420	740	400	400	200		200	650	580	1,230
5	Detroit/Ann Arbor, MI	4641041	370	502	871	219	219	200		200	650	600	1,250
6	Boston-Lowell-Brockton-L..	4429259	270	316	585	410	410	200		200	650	597	1,247
7	San Francisco-Oakland, CA	4335391		413	413	100	100	100	100	200	750	787	1,537
8	Washington, DC-MD-VA	4814094	400	388	788	246	246				850	700	1,550
9	Dallas-Fort Worth, TX	6331595	400	300	700	346	346	200		200	650	700	1,350
10	Houston, TX	5565594	400	402	802	298	298				850	700	1,550
11	St. Louis, MO-IL	2609015	400	300	700	500	500				850	600	1,450
12	Miami-Fort Lauderdale-H..	4244501	234	300	534	400	400	200		200	650	700	1,350
13	Pittsburgh, PA	1966876	400	526	926	286	286				850	588	1,438
14	Baltimore, MD	2662691	319	393	712	306	306				850	700	1,550
15	Minneapolis-St. Paul, MN-..	3112499	400	306	706	505	505				850	589	1,439
16	Cleveland, OH	1775884	320	401	720	302	302					599	599
17	Atlanta, GA	4632966	400	389	789	412	412	200		200	650	599	1,249
18	San Diego, CA	3095313	320	410	730	233	233					690	690
19	Denver-Boulder, CO	2789669	160	300	460	302	302				300	700	1,000
20	Seattle-Everett, WA	2644584	400	389	789	411	411				850	600	1,450
21	Milwaukee, WI	1555908	320	301	621	500	500				850	599	1,449
22	Tampa-St. Petersburg, FL	2610465	398	299	697	501	501	200		200	650	600	1,250
23	Cincinnati, OH-KY-IN	1631344	240	338	578	500	500					562	562
24	Kansas City, MO-KS	1810075	320	400	720	400	400					600	600
25	Buffalo, NY	1135509	80	399	479	424	424				850	501	1,351
26	Phoenix, AZ	3817117	400	299	699	441	441					600	600
27	San Jose, CA	1781642	240	592	832	100	100	100	100	200	750	608	1,358
28	Indianapolis, IN	1703036	320	400	720	400	400				850	600	1,450
29	New Orleans, LA	1046018	80	500	580	300	300				850	600	1,450
30	Portland, OR-WA	2066399	320	402	722	400	400				850	598	1,448

Notes:

- 1250 MHzScreen applies to 28/39 GHz only
- Among the top 25 markets, a VZ + Straight Path would pierce the 1250 MHz screen in most markets.
- In markets close to the screen, there may be portions where a combined entity would not pierce the screen. It would require a county level analysis to fully determine which parts of the CMAs would be below the screen.
- Fibertowers's24 GHz spectrum is not part of the mmWscreen.
- In these markets, FCC's 39 GHz spectrum was mostly returned from Straight Path

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Figure 15. mmW Holding by Band.
Source: CCA, 2017.

As another example, the current proposed license transfers from FiberTower Corporation to AT&T requests a grant renewal for the majority of FiberTower's licenses that automatically terminated for failure to meet substantial service requirements, and that are subject to a pending remand from the United States Court of Appeals for the District of Columbia Circuit ("Terminated Licenses"). This transaction would enrich AT&T's spectrum holdings with LMDS and 39 GHz spectrum surpassing the 1250 GHz spectrum holdings threshold described in the *Spectrum Frontiers Report and Order*.

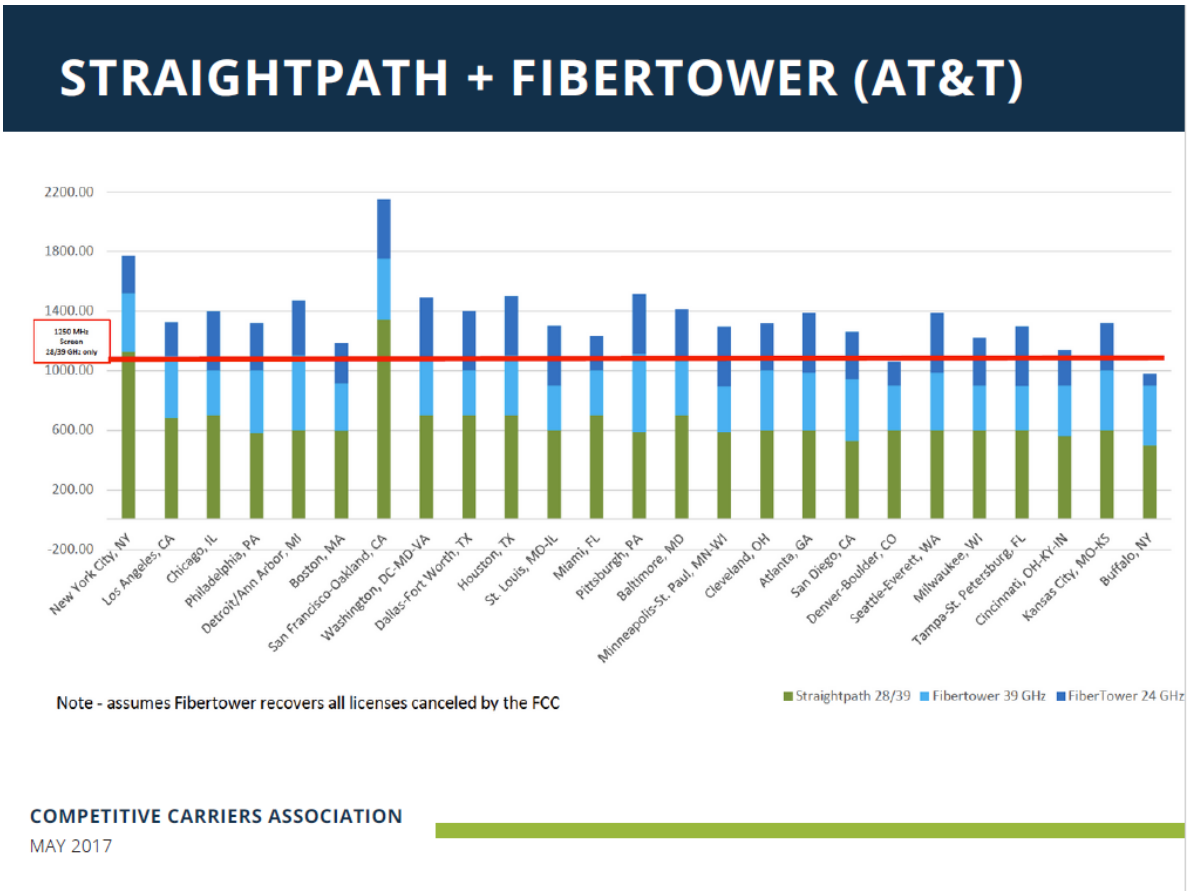

Figure 16. Potential increases in 28 GHz and 39 GHz spectrum holdings in top 25 markets if AT&T acquires Straight Path.
Source: CCA, 2017.

The Commission should recover these licenses and re-auction the spectrum in the 39 GHz band, and potentially the 24 GHz band.[121] An auction would afford all carriers, not just one, the potential to obtain spectrum to provide next generation and 5G services to consumers, and also would allow the United States Treasury to receive funds for deficit reduction to the benefit of all taxpayers. In the alternative, approving the transfer of control for the Terminated Licenses will set an alarming precedent for future transactions involving mid-, and high-band

[121] *See e.g.*, CCA Comments, ULS File Nos. 0007652635 and 0007652637 (filed Mar. 30, 2017); CCA Reply Comments, ULS File Nos. 0007652635 and 0007652637 (filed Apr. 13, 2017). Fiber Tower's 24 GHz spectrum is not part of the spectrum screen adopted in the *Spectrum Frontiers Report and Order*. *See Spectrum Frontiers Report and Order* ¶ 184.

spectrum. As astutely summarized "[t]hese transactions, along with [AT&T's] FirstNet 700 MHz award, their yet-to-be-deployed AWS-3 spectrum holdings, and their still largely fallow WCS spectrum bands, have vaulted AT&T from the one-time ranks of spectrum-constrained to spectrum rich."[122] The Commission must closely examine the potential combined strength of Straight Path and FiberTower and AT&T holdings, or possibly combined Verizon and FiberTower holdings, to ensure that no anticompetitive harm will result.

What's more, last year Verizon finalized its acquisition of XO, and the FCC approved Verizon's long-term lease of XO's spectrum, with an option to purchase. The XO licenses Verizon acquired cover 65% of the POPs for LMDS spectrum (27.5-28.35 GHz, 29.1-29.25 GHz, and 31.0-31.3 GHz) in the top 60 markets nationwide. As CCA noted last year, the transaction represents a significant step in the direction of anti-competitive aggregation of mmW spectrum.[123] Allowing mmW spectrum to amass between the two dominant incumbent carriers would significantly minimize, or foreclose entirely, competitive carriers' ability to drive 5G innovation.

Additionally, secondary market transactions threaten to choke wireline resources solely in the hands of the two largest providers. For example, Verizon recently entered into a $1.05 billion contract with Corning to supply fiber cable and other equipment for its One Fiber Initiative.[124] Per the agreement, Corning will provide up to 12.4 million miles of optical fiber per year until 2020, which will be used to bolster Verizon's ability to compete in 5G

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[122] *See* MoffettNathanson, "AT&T: The Long and Winding Road…To Straight Path" (Apr. 10, 2017) ("MoffettNathanson Blog").

[123] Comments of Competitive Carriers Association, ULS File No. 0007162285, at 5 (filed May 3, 2016).

[124] *See* RCRWirelessNews, "Verizon signs billion-dollar deal with Corning for 37.2M miles of fiber for LTE, 5G" (Apr. 18, 2017), *available at* http://www.rcrwireless.com/20170418/carriers/verizon-signs-billion-dollar-deal-with-corning-for-37-2m-miles-of-fiber-for-lte-5g-tag2.

deployment.[125] The Commission must employ targeted transactional review to ensure all carriers are afforded access to these critical network inputs.

These transactions should not be limited solely to the scope of DOJ's antitrust review, and must be fully vetted by the Commission. The FCC, unlike the DOJ, must look beyond antitrust concerns when reviewing a transaction and decide whether a proposed transaction would further the "public interest, convenience and necessity."[126] The Commission's public interest analysis must be based on a public record developed through public notice and an opportunity to comment. The Commission's transaction review process in many cases is better equipped to respond to the protean mobile market, and evolving public interest concerns; a telecommunications transaction that survives an antitrust review may nonetheless seriously curtail mobile competition and thus harm the public. CCA encourages the Commission to seize opportunities to use its authority to review these types of transactions, recognizing that the public interest is furthered by strong rural and regional carriers.

v. *Access to Content and Devices*.

As the Commission reviews secondary market transactions and addresses technology issues in proceedings such as *Spectrum Frontiers*, it is vital that rules promote access to devices and content. This includes imposing interoperability requirements, where necessary, and monitoring transactions that threaten access to content over wireless networks. Despite consolidation in the market, the FCC must facilitate opportunities for competitive carriers to

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[125] In addition to these transactions, media mergers continue to constrain spectrum and content resources. As another example, Google purchased Alpental Technologies in 2014. Per the purchase, Google obtained a significant amount of mmW spectrum, where 5G is expected to live and which can be used for next-generation mobile systems and wireless broadband. *See* The Guardian, "Google acquisition spree takes in Dropcam and Alpental" (June 24, 2014), *available at* https://www.theguardian.com/technology/2014/jun/24/google-dropcam-alpental.

[126] 47 U.S.C. § 309.

engage in 5G deployment. It is imperative that channels to content remain open, accessible, and affordable.

As noted above, AT&T and Verizon's barrage of recent transactions threaten to saturate this portion of the mobile ecosystem. Specifically, Verizon' acquisition of AOL and Yahoo represents a significant transfer of media content that is now sequestered from other carriers. In fact, Verizon recently announced its new brand, "Oath," which will house these combined assets to enhance the services provided to its consumers.[127] Similarly, last year AT&T finalized its $48.5 billion takeover of DirecTV,[128] paving the way for its proposed $85 billion takeover of Time Warner.[129] This media content, combined with a potential swath of mmW spectrum from StraightPath and FiberTower is a dangerous combination against fostering ubiquitous broadband deployment across rural and remote areas.

The media market appears to be trending toward online and streaming alternatives to traditional television distributions, including deals with incumbent providers and large Internet companies. Competitive carriers will not necessarily be able to compete in such a market structure. It is highly unlikely, for example, that a competitive carrier could model Verizon and spend more than $20 million to stream a single National Football League ("NFL") game.[130] Last season, Twitter streamed ten NFL games and, in 2017, Amazon is reportedly paying $50 million

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[127] *See* Niraj Chokshi and Vindu Goel, *Verizon Announces New Brand Name for AOL and Yahoo: Oath*, THE NEW YORK TIMES (Apr. 3, 2017), *available at* https://www.nytimes.com/2017/04/03/technology/verizon-oath-yahoo-aol.html?_r=0.

[128] *See* Emily Steel, "FCC Approves AT&T-DirecTV Deal" THE NEW YORK TIMES (July 24, 2015), *available at* http://www.nytimes.com/2015/07/25/business/media/fcc-approves-att-directv-deal.html.

[129] *See* The Hill, "AT&T, Time Warner defend deal" (Feb. 17, 2017), *available at* http://thehill.com/policy/technology/320148-att-time-warner-defend-deal.

[130] Kurt Wagner, *Verizon will pay the NFL more than $20 million to stream a single football game in his fall*, RECODE (May 3, 2017), https://www.recode.net/2017/5/3/15533736/verizon-nfl-stream-deal-jaguars-ravens.

to stream ten NFL games behind a paywall.[131] Indeed, the duopoly's ability to offer consumers exclusive digital video content over their wireless networks provides a significant competitive advantage over other industry stakeholders.

In addition, the Commission should monitor inequities among data managers and software providers that impact competitive carrier operations and vendors serving competitive carriers. For example, Google's profound 88% market share of mobile platform shipments and 55% of global mobile ad revenue—at least partially secured through misappropriating Oracle's intellectual property—has distorted the marketplace for mobile operating systems, online advertisers, and consumers alike.[132] The Commission must consider the extent of these data assets when assessing the competitive impact of secondary market deals and mergers. Policymakers should "loosen the grip that providers of online services have over data and give more control to those who supply them,"[133] beginning with targeted review of transactions that isolate swaths of content.

vi. *Public Safety*.

On March 30, 2017, FirstNet announced that AT&T was selected to build and manage the first National Public Safety Broadband Network ("NPSBN").[134] Under the terms of the agreement, FirstNet will provide 20 MHz of low-band spectrum and $6.5 billion to AT&T over

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[131] *Id.*

[132] *See* Brief for Competitive Carriers Association, p. 21, *Oracle v. Google*, Case Nos. 17-1118, -1202 (Fed. Cir. 2017).

[133] *See* The Economist, "The world's most valuable resource is no longer oil, but data" (May 6, 2017), *available at* http://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource.

[134] *See* AT&T Newsroom, *AT&T Selected by FirstNet to Build and Manage America's First Nationwide Public Safety Broadband Network Dedicated to First Responders* (Mar. 30, 2017), *available at* http://about.att.com/story/firstnet_selects_att_to_build_network_supporting_first_responders.html.

the next five years. While this represents an important step in deploying next-generation safety services, the Commission should ensure that the FirstNet award to AT&T and the corresponding network buildout does not stifle competition among carriers. Primarily, competitive carriers must be included to the maximum extent possible in developing the NPSBN. Pursuant to Section 6202(b)(3)'s requirement that deployment phases include "substantial rural coverage milestones,"[135] FirstNet should prioritize allowing smaller, competitive carriers to propel buildout in rural and hard-to-reach areas, and ensure this buildout occurs in each service deployment phase. After all, AT&T and FirstNet will need smaller carriers to help them achieve the lofty goal of a nationwide public safety network, especially to help reduce construction costs and siting delays.

[135] 47 U.S.C. § 6206 (b)(3).

V. CONCLUSION

As explained herein, the Commission's upcoming *Report* must undertake a traditional market power analysis based on accurate data. In assessing market characteristics, the Commission should rely on the experience of competitive carriers, such as CCA members, who continuously work to provide service and promote competition throughout the ecosystem. The next year will be a time of significant transition in the wireless market as recent regulatory and technological changes take hold, and as carriers move toward 5G and IoT technologies. During this transitional period, the Commission should take a pause and avoid any sweeping changes while it observes how the markets evolve. As required by statute, this transition is an ideal time to enact policy reforms to inspire ubiquitous mobile broadband deployment and promote comprehensive mobile wireless competition.

Respectfully submitted,

/s/ Rebecca Murphy Thompson

Steven K. Berry
Rebecca Murphy Thompson
Courtney Neville
COMPETITIVE CARRIERS ASSOCIATION
805 15th Street NW, Suite 401
Washington, DC 20005
(202) 449-9866

May 8, 2017