No. 21-1130

IN THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA

INTELLIGENT TRANSPORTATION SOCIETY OF AMERICA AND THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS,

Appellants-Petitioners,

v.

FEDERAL COMMUNICATIONS COMMISSION AND THE UNITED STATES OF AMERICA,

Respondents.

On Appeal from the Federal Communications Commission

BRIEF FOR *AMICUS CURIAE* PUBLIC KNOWLEDGE IN SUPPORT OF RESPONDENTS/APPELLEE

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October 20, 2021

CERTIFICATE AS TO PARTIES, RULINGS UNDER REVIEW, & RELATED CASES

(A) Parties and Amici. The Petitioners in No. 21-1130 and Appellants in No. 21-1131 are the Intelligent Transportation Society of America and the American Association of State Highway and Transportation Officials. The Petitioner in No. 21-1140 is the Amateur Radio Emergency Data Network.

The Respondents in the petitions for review (Nos. 21-1130 and 21-1140) are the Federal Communications Commission and the United States of America. The Appellee in the appeal (No. 21-1131) is the Federal Communications Commission.

Continental Automotive Systems, Inc. has intervened in support of Petitioners/Appellants. The following parties have each intervened in support of Respondents/Appellee:

- NCTA—The Internet & Television Association
- Wi-Fi Alliance
- The 5G Automotive Association

The American Traffic Safety Services Association, American Highway Users Alliance, Institute of Transportation Engineers,

Mothers Against Drunk Driving, and the National Safety Council have filed an amicus brief in support of Petitioners/Appellants. CTIA—The Wireless Association has filed a notice of intent to file an amicus brief in support of Respondents/Appellee. Public Knowledge (PK) and the Open Technology Institute at New America (OTI), parties to this brief, also appear as *amici* for Respondents/Appellee.

(B) Rule 26.1 Disclosure. Per D.C. Cir. R. 26.1 and Fed. R. App. P. 26.1, Public Knowledge and the Open Technology Institute at New America, state that neither organization has a parent corporation and that no publicly held corporation holds 10% or more of either organization's stock.

(C) Rulings Under Review. The petitions for review and the appeal challenge the following order of the Federal Communications Commission: First Report and Order, Further Notice of Proposed Rulemaking, and Order of Proposed Modification, Use of the 5.850–5.925 GHz Band, 35 FCC Rcd. 13440 (2020) (Order), reprinted at (JA____–___.)

(D) Related Cases. This Court nor any other court has reviewed the Order at issue here. PK and OTI are not aware of any other related cases within the meaning of D.C. Circuit Rule 28(a)(1)(C).

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GLOSSARY OF ABBREVIATIONS

BSM	Basic Safety Messages
C-V2X	Cellular Vehicle-to-Everything
DOT	U.S. Department of Transportation
DSRC	Dedicated Short Range Communications
FCC	Federal Communications Commission
GHz	Gigahertz
ITS	Intelligent Transportation Systems
LMSC	IEEE 802 LAN/MAN Standards Committee
MHz	Megahertz
PK	Public Knowledge
Order	Use of the 5.850-5.925 GHz Band, First Report and Order, Further Notice of Proposed Rulemaking, and Order of Proposed Modification, 35 FCC Rcd 13440 (2020)
OTI	The Open Technology Institute at New America
STA	Special Temporary Authority
V2X	Vehicle-to-Everything
V2V	Vehicle-to-Vehicle
WISPs	Wireless Internet Service Providers

STATEMENT OF IDENTITY, INTEREST IN CASE, & SOURCE OF AUTHORITY TO FILE

Per D.C. Cir. R. 29(b) and Fed. R. of App. P. 29(b), Public Knowledge (PK) and the Open Technology Institute at New America (OTI) provide notice to the Court of its intent to participate as *amicus curiae* in support of the Federal Communications Commission and the United States of America (appellees-respondents) in the matter referenced above. All parties to the lead case and consolidated cases, including Appellants, Appellees, and Intervenors, have consented to or do not oppose PK and OTI's participation in this capacity.

PK is a non-profit organization that promotes freedom of expression, an open internet, and access to affordable communications tools and creative works. PK's advocacy work encompasses a wide array of technology-based issues, including spectrum management. PK carefully considers the consequences of how spectrum access is managed and advocates for diverse approaches to spectrum access that expand unlicensed use, encourage competition, and prevent the largest companies from hoarding spectrum access at the public's expense.

OTI is a non-profit policy institute that works at the intersection of technology and policy to ensure that every community has access to digital technology and its benefits. OTI's Wireless Future Project is focused on developing and advocating for policies that promote more affordable, ubiquitous, high-speed Internet connections to all Americans, particularly in under-served rural and low-income areas.

As leading advocates for public interest spectrum access policies, PK and OTI will provide an *amicus curiae* perspective that will aid the Court in its review of the current matter. *See* Fed. R. App. P. 29(a)(3)(B).

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STATEMENT OF AUTHORSHIP & FINANCIAL CONTRIBUTIONS

Pursuant to Federal Rule of Appellate Procedure 29(a), the ensuing brief was authored in whole by counsel for amici curiae. No party or party's counsel contributed money intended to fund the preparation or submission of the brief. No person, other than amici curiae or its counsel contributed money that was intended to fund preparing or submitting the brief.

ARGUMENT

I. Introduction

Unhappy that the Federal Communications Commission (FCC or the Commission) has decreased their spectrum bankroll, Appellants and Intervenors are trying to chase their losses to the Court. But the Court cannot offer their desired relief because the FCC properly determined that the public interest called for reallocating our nation's limited spectrum resources.

It is well settled that Congress vested the FCC with exclusive control over the nation's airwaves. Congress "gave the Commission not niggardly but expansive powers" to carry out its "comprehensive mandate to encourage the larger and more effective use of radio in the public interest...."[1] Importantly, "[i]f time and changing circumstances reveal that the 'public interest' is not served by application of the Regulations, it must be assumed that the Commission will act in accordance with its statutory obligations."[2] This is exactly what

[1] National Broadcasting Co. v. U.S., 319 U.S. 190, 219 (1943) (internal citations omitted).
[2] *Id.* at 225.

happened here. The Commission first allocated spectrum to ITS services over 20 years ago.[3] Since then, time and changing circumstances have revealed that the original allocation of 75 megahertz of spectrum to ITS services no longer serves the public interest.

First, despite Appellants' claims, the record before the Commission demonstrated that 30 megahertz is more than sufficient to deliver the public safety benefits promised by ITS services. The record explicitly demonstrated that ITS licensees do not need the 45 megahertz of spectrum reclaimed by the Commission for public safety purposes—especially in light of the conversion to the more modern and efficient C-V2X technology. After more than 20 years of unmet promises, the Commission's skepticism that continuing to allocate 75 megahertz to ITS licensees would lead to any new safety innovations, not just profitable non-safety related commercial services, was

[3] *Use of the 5.850-5.925 GHz Band, First Report and Order, Further Notice of Proposed Rulemaking, and Order of Proposed Modification*, 35 F.C.C.R. 13440, 13446 ¶ 14 (2020) [hereinafter Report & Order]. (JA____–___.)

justified. What is at stake is not safety, rather it is access and control over one our nation's most valued and limited resources—spectrum.

As the age-old saying goes, "when someone claims it's not the money, it's the principle—it's really about the money." Since the early 2000s, the auto industry has hoped to monetize the excess capacity not needed for public safety.4 As documented by the Open Technology Institute at New America (OTI), the auto industry has long discussed the ability to monetize this free spectrum by offering services such as targeted mobile advertising and streaming entertainment.[5] ITS supporters have consistently refused to accept a non-commercial condition that would prevent them from exploiting the "safety band" for commercial purposes.[6]

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[4] *See Amendment of the Commission's Rules Regarding Dedicated Short-Range Communication Services in the 5.850-5.925 GHz Band (5.9 GHz Band), Notice of Proposed Rulemaking and Order*, 17 FCC Rcd 23136, 23147 ¶ 16 (2002).

[5] Michael Calabrese, *Spectrum Silos to Gigabit Wi-Fi: Sharing the 5.9 GHz 'Car Band,'* at 19-22 (Jan. 2016), https://static.newamerica.org/attachments/12279-spectrum-silos-to-gigabit-wi-fi/OTI_5.9ghz_web.5de7495517f3416cae27fe811f0f985b.pdf.

[6] Report & Order, *supra* note 3, at 13507 ¶ 168. (JA____–___.)

Tellingly, despite claiming to need 75 megahertz for public safety, ITS supporters failed to identify in the record any specific use case that required this much spectrum. Instead, ITS supporters relied on vague, generalized statements about how reallocation would prevent some unspecified future safety technology from being deployed. As Commissioner O'Reilly observed in his concurring statement, ITS licensees' desire for excess free spectrum to offer targeted mobile advertising and other commercial services is not in the public interest.

Second, the Appellants and Intervenors seek to portray the Commission's action here as an arbitrary pruning of public safety for the sake of trivial entertainments on WiFi. But as the record shows, the exact opposite is true—the expansion of unlicensed spectrum access will itself save lives and improve the public's quality of life.

Moreover, the Commission properly relied on its experience during the COVID-19 pandemic to determing that permanently reallocating the lower 45 megahertz of the 5.9 GHz band will enhance the delivery of rural broadband. The Commission granted Special Temporary Authority (STA) to more than 100 wireless ISPs primarily to operate in rural areas using this same spectrum at the beginning of

March 2020.[7] Some Wireless Internets Service Providers (WISPs) increased capacity as much as 75 percent with the added support of the 5.9 GHz band, and crucially, there have yet to be any reports of harmful interference or problems associated with the STA grants.[8] The success of these STA grants demonstrates the very real public benefits reallocating this spectrum permanently will have on rural america. This will not only permit delivery of life-saving telemedicine services (in addition to critical educational services and other services) to rural Americans. It will also make these high-bandwidth, latency sensitive services available to all Americans by making it possible to adopt next generation Wi-Fi technologies, such as Wi-Fi 6. By splitting the spectrum pot with unlicensed use, the Commission appropriately allocated spectrum in a way that will best serve the public interest by saving lives and closing the digital divide.

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[7] Report & Order, *supra* note 3 at 13451 n. 61. (JA____–___.)
[8] Joan Engebretson, *WISPs See Speed Bandwidth Boosts as High as 75% Using 5.9 GHz Spectrum,* Telecompetitor (May 5, 2020), https://www.telecompetitor.com/wisps-see-speedbandwidth-boosts-as-high-as-75-using-5-9-ghz-spectrum/.

II. Appellants and Intervenors Are Concerned About Money, Not Public Safety.

Appellants and Intervenors claim that they are all-in on the speculative safety benefits of advanced ITS services, but this misdirects the Court in an attempt to hide the real play. As the Commission has explained, the proceeding's record supported its finding that 30 megahertz is sufficient to achieve the safety goals of ITS.[9] So if safety is not at stake, then what is? Unsurprisingly, the age-old truism, "follow the money," gives away the real stakes—more money.

First, the Commission did not call the bluff on those claiming that ITS licensees need 75 megahertz of spectrum to save lives on a whim. It did so based on an extensive record that supports the Commission's conclusion that the unique benefits of combining the lower 45 MHz of the band with the existing unlicensed allocation would help to bring broadband to rural areas and enable home networks to use modern gigabit networks through adoption of Wi-Fi 6.

[9] Appellee's Br. 34.

This alone is enough for the Court to reject the Appellants' and Intervenors' claims. As the Supreme Court held in National Broadcasting, a court's "duty is at an end when [it] find[s] that the action of the Commission was based upon findings supported by evidence, and was made pursuant to authority granted by Congress."[10] In the Report and Order, the Commission explained at length that 30 megahertz is sufficient to accommodate the public safety benefits originally contemplated for ITS services.[11] The Commission's decision was based on extensive support provided by numerous groups representing a diverse set of ideologies and interests including Public Knowledge,[12] OTI,[13] NCTA—The Internet and Television Association,[14]

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[10] 319 U.S. at 224.
[11] Report & Order, *supra* note 3, 13451-13461 ¶ 29-46. (JA____–___.)
[12] Comments of New America's Open Technology Institute and Public Knowlege, *In the Matter of Use of the 5.850-5.925 GHz Band*, 20 (Mar. 9, 2020). (JA____–___.)
[13] *Id.* (JA____–___.)
[14] Comments of NCTA—The Internet & Television Association, *In the Matter of Use of the 5.850-5.925 GHz Band*, 20 (Mar. 9, 2020) [hereinafter NCTA Comments]. (JA____–___.)

the Dynamic Spectrum Alliance,[15] TechFreedom,[16] and the R Street Institute.[17]

Even proponents of keeping the full 75 megahertz for ITS services conceded in the record that 30 megahertz is sufficient to accommodate critical vehicular-to-everything (V2X) communications, such as Basic Safety Messages (BSMs).[18] Some technical studies misleadingly concluded that ITS services would need the full 75 megahertz. This inflated estimate was accomplished by speculating about potential future services. But these studies provided no detailed explanation of what these services would be, or why they required a full 45

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[15] Comments of the Dynamic Spectrum Alliance, *In the Matter of Use of the 5.850-5.925 GHz Band*, 4 (Mar. 9, 2020). (JA____–___.)

[16] Comments of TechFreedom, *In the Matter of Use of the 5.850-5.925 GHz Band*, 4 (Mar. 9, 2020). (JA____–___.)

[17] Comments of R Street Institue, *In the Matter of Use of the 5.850-5.925 GHz Band*, 7 (Mar. 9, 2020). (JA____–___.)

[18] Report & Order, *supra* note 3, ¶ 34, 43, 5GAA Letter to Ms. Dortch, *Re: Notice of Ex Parte: 5.850-5.925 GHz Band, ET Docket No. 19- 138* (Oct. 1, 2020) (detailing 5GAA's two proposals, both which allocate the top 30 megahertz of the 5.9 GHz band for "Basic C-2VX Direct Services.") (JA____–___) ; Comments of Car 2 Car, *In the Matter of Use of the 5.850-5.925 GHz Band*, 2-3 (Mar. 9, 2020). https://ecfsapi.fcc.gov/file/1030955870143/FCC_NPRM_2019_5.9%20GHz_CAR2CAR_Communication_Consortium.pdf (acknowledging that awareness driving ITS applications only need 30 meghartz of spectrum) [hereinafter Car 2 Car Comments]. (JA____–___.)

megahertz. When speculative advanced ITS services are removed from the calculus of Car to Car's technical analysis, it shows that 30 megahertz is sufficient to support critical V2X communications.[19] Even DOT's original proposal for a DSRC mandate (since abandoned) limited all vehicle-to-vehicle (V2V) crash-avoidance signals to a single 10 megahertz channel.[20] The Commission was well within the exercise of its expert judgment to discount unsupported and speculative claims about possible future services—especially in light of the industry's failure to deploy even the most basic collision avoidance systems over the last two decades.

The Commission's conclusion that 30 megahertz is sufficient for V2X safety communications is also supported by other regulatory agencies from around the world. China has only allocated 20

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[19] Car 2 Car Comments at 2-3. (JA____–___.)

[20] Harding, J. et al., Vehicle-to-vehicle communications: Readiness of V2V technology for application, National Highway Traffic Safety Administration, Report No. DOT HS 812 014 (Aug. 2014) ("V2V Readiness Report"), at 56. *See also* Michael Calabrese & Amir Nasr, *The 5.9 GHz Band Removing the Roadblock to Gigabit Wi-Fi*, Open Technology Institute, 21 (July 2020), https://d1y8sb8igg2f8e.cloudfront.net/documents/The_5.9_GHz_Band_.pdf.

megahertz for ITS use and Japan has allocated even less—10 megahertz. Although Intervenors claim that Europe's recent decision to allocate more spectrum to ITS use contradicts the Commission's conclusion, Europe did not base its decision on a belief that additional spectrum was necessary for *auto safety*.[21] Au contraire, the European Commission allocated an additional 20 megahertz for shared use by urban rail, to promote the EC's environmental goals, as well as for shared use for *non-safety* ITS applications and non-spacific short range devices.[22] This is unsurprising as the European Union issued a report in 2019 that found that real-time auto safety operations only need 30 megahertz—even if DSRC and C-V2X deployments coexist in the same spectrum band.[23] The report concluded that "[t]here is no evidence that

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[21] Continental Br. 27.

[22] European Commission Implementing Decision of 7 October 2020 on the harmonised use of radio spectrum in the 5 875-5 935 MHz frequency band for safety-related applications of intelligent transport systems (ITS) and repealing Decision 2008/671/EC, C(2020) 6773 final; *see also*, 5GAA Position Paper, *Deployment Band Configuration for C-V2x at 5.9 GHz in Europe*, 3-4 (2021), https://5gaa.org/wp-content/uploads/2021/06/5GAA_S-210019_Position-paper-on-European-deployment-band-configuration-for-C-V2X_final.pdf.

[23] *See* European Conference of Postal and Telecommunications Administrations, CEPT Report 71 at 7

spectrum availability is currently a constraint on the development of ITS."[24]

Regardless, the decision of the European Union to speculate on future ITS technologies requiring more spectrum and to expand the scope of ITS to include "urban rail" (which uses a different allocation of spectrum in the U.S.) is hardly determinative of U.S. policy. That a different set of regulators, with a different statutory mandate and a different set of concerns on a different record disagrees with the FCC is simply proof that two regulators disagree. The FCC is entitled to its own expert opinion, based on its own record and its own statutory mandate to serve the public interest as defined by Congress. While the decision of other governments (such as those allocating even less spectrum for ITS) deserve consideration, a disagreement between the EU and the FCC about the appropriate scope of ITS (i.e., whether to include both road and rail) and how much spectrum to allocate does not make the Commission's decision arbitrary and capricious.

(2019) https://www.ecodocdb.dk/download/19a361a9-d547/CEPTRep071.pdf.

[24] *Id.*

Second, digging beyond the record's surface reveals the real action for ITS Licensees—a side-bet on advanced ITS services that have nothing to do with public safety. Advanced ITS services go far beyond preventing vehicular accidents, many have nothing to do with public safety at all. As 5GAA boasts on its website, "C-V2X will enlighten any journey by powering real-time traffic information to optimise your trip, *finding the closest free parking space* or *enabling predictive maintenance* to save drivers both time and money."[25] And, "passengers will [benefit] too with the next-generation of infotainment services. Whether you want to watch a movie during the ride or participate in an important conference call…." [26] These services are a far cry from technological advances Petitioners insist will help save lives.

The Commission's record explicitly reflected that the real reason ITS Licensees want to keep their previous spectrum hand is really about money, not public safety. IEEE 802 LAN/MAN Standards

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[25] 5GAA, *Experience the Future of Mobility*, https://5gaa.org/5g-technology/experience-the-future/ (last accessed Oct. 20, 2021) (emphasis added).
[26] *Id.*

Committee (LMSC), a standards setting body that has developed core ITS technology, commented that "non-safety critical messages may constitute the major economic driver for market adoption of V2X." As an example, LMSC discussed how ITS technology could "improve fuel efficiency by up to 14% for the involved vehicles, potentially leading to billions of dollars in savings for the trucking industry…"[27] Significantly, LMSC also concluded that these non-critical ITS messages would "creat[e] frequent potential interference with BSMs," making 30 megahertz "insufficient to support both" critical and non-critical ITS messages.[28] Essentially, not only are there no discernable public-safety benefits to these advanced ITS services, they would also significantly interfere with the basic V2X communications that do provide critical public safety services.

Simply put, Appellants' and Intervenors' claims that they need 75 megahertz to protect lives does not hold up. The FCC appropriately called this bluff by reallocating 45 megahertz of

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[27] Comments of IEEE, *In the Matter of Use of the 5.850-5.925 GHz Band*, 7 (Mar. 3, 2020). (JA____–___.)
[28] *Id.* (JA____–___.)

underutlized spectrum to unlicensed use while continuing to protect road safety.

III. The Public Interest is Served by Reallocating Underutilized Spectrum in the 5.9 GHz band to Unlicensed Use.

The Commission appropriately determined that the public interest demanded new house rules for the 5.9 GHz band. The Supreme Court held, "Our duty is at an end when we find that the action of the Commission was based upon findings supported by evidence, and was made pursuant to authority granted by Congress. It is not for us to say that the 'public interest' will be furthered or retarded by the...Regulations."[29] And, as this Court has explained, "to pass our review the agency need only articulate a "rational connection between the facts found and the choice made."[30] Without "highly persuasive evidence to the contrary," this Court "uphold[s] the Commission if it makes a technical judgment that is supported with even a modicum of reasoned analysis[.]"[31] Just as the house receives

[29] 319 U.S. at 224 (internal citations omitted).
[30] Mobile Relay Assocs. v. FCC, 457 F.3d 1, 8 (D.C. Cir. 2006)
[31] *Id.*

deference to its own rules, the Commission is also due considerable deference when determining how to allocate our nation'snations spectrum resources on behalf of the public.

Despite significant resources and time, ITS licensees have failed to deliver their promised technological advances to vehicular safety. Meanwhile, demand for Wi-Fi and unlicensed spectrum has significantly increased. As the Commission explained, "transportation and vehicular safety-related technologies have evolved significantly, as have demands for access to mid-band spectrum, particularly for unlicensed operations." The *Order* explicitly pointed to the Commission's experience during the Covid-19 pandemic to support its conclusion that access to unlicensed spectrum would provide broadband to unserved rural America and enable critical new applications in the home such as distance learning and telemedicine. Based on these changed circumstances, the Commission, "...determined that the optimal use of this band has changed as well, and that the public interest would be better served by reconfiguring the 5.9 GHz

band."[32] Essentially, the Commission did what it is required to do—ensure that our nation's telecommunications regulations continue to serve the public interest.

A. Despite Having Adequate Time & Resources, ITS Licenses Have Failed to Deliver the Promised Safety Benefits of DSRC Technology.

Traffic accidents and traffic-related deaths are tragic events that Appellants and Intervenors claim they can prevent if only allotted more spectrum. But, the nation has already waited more than 20 years for ITS services to provide the magic solution to this public harm. The Commission rightfully decided that continuing to bet 75 megahertz of prime spectrum on services that still do not exist no longer serves the public interest.

Not only did ITS licensees receive access to exclusive no-auction spectrum, the Department of Transportation has invested more than a billion dollars in DSRC development since it was first authorized.33 Despite the advantages of receiving such significant public resources,

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[32] Report & Order, *supra* note 3 at ¶ 14. (JA____–___.)
[33] Report & Order, *supra* note 3 at ¶ 31, n. 75; NCTA Comments, *supra* note 14 at 12. (JA____–___.)

only 15,506 vehicles are equipped with DSRC on-board-units.[34] This equates to a mere .0057% of the nation's registered vehicles.[35] Moreover, there are no commercial deployments of DSRC-based ITS services.[36] The auto industry has also given no indication that they will use this band anytime soon for further auto safety uses. Even the Department of Transportation (DOT) concluded that without a federal mandate the private sector would not adopt ITS services at a sufficient scale to effectively provide ITS services.[37] Even if Congress did issue a federal mandate to deploy ITS services, DOT concluded that it would take decades and cost the American public, government, and automobile sector billions.[38]

While ITS licensees frittered away the last 20 years at a cold table, others have anteed up and delivered what they could not.

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[34] Report & Order, *supra* note 3 at ¶ 31. (JA____–___.)
[35] *Id.* (calculated using the Commission's finding that only 15,506 out of the nation's 274 million registered vehicles are equiped with DSRC technology).
[36] *Id.*
[37] OTI Report, *supra* note 21 at 7-8 (Referencing findings from the National Highway Traffic Safety Administration which exists within the Department of Transportation).
[38] *Id.*

Technologies such as "[o]ptical cameras, sonar, and LiDAR (light detection and ranging) are commonly found in many of today's vehicles."39 As the Commission explained, these breakthroughs "have materially and significantly advanced overall automotive safety, generally surpassing many functions that were originally envisioned to be performed by DSRC (e.g., lane-keeping alerts, lane merge, etc.)."40 Additionally, the Commission has made spectrum available in the 76-81 GHz band for vehicular radar systems that "are especially useful for automatic emergency braking systems and adaptive cruise control systems."41 These are some of the basic safety functions that ITS services were supposed to deliver more than two decades ago.

Between the abysmal track record of ITS licensees to deliver on their promises and the arrival of new technologies using unlicensed spectrum that can, the Commission rightfully concluded that the assurances of ITS licensees are no longer enough to continue

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39 Report & Order, *supra* note 3 at ¶ 32. (JA____–___.)
40 *Id.* (JA____–___.)
41 *Id.* (JA____–___.)

bankrolling their ventures with 75 megahertz of prime spectrum. Any other conclusion would risk more than the public interest can afford.

B. Unlicensed Access to Spectrum in the 5.9 GHz Band Provides Essential Consumer Benefits.

In 1999, the Commission made a blind bet on ITS services by allocating 75 megahertz of spectrum to unproven DSRC technology. At the same time, Wi-Fi was in its infancy. The Commission could not have predicted that Wi-Fi would mature into the critical, essential service that it is today while ITS services languished, never fully coming to fruition. Now, with the benefit of experience, the Commission has made appropriate adjustments to its regulation of the 5.9 GHz band to account for these changes and meet the public's need for more unlicensed spectrum.

Unlicensed spectrum is necessary for so much more than "smart toasters and washing machines."[42] In fact, as the Commission noted, numerous collision avoidance technologies developed as *unlicensed spectrum technologies* while ITS services slumbered on 5.9 GHz. Given that unlicensed spectrum technologies have saved more lives on

[42] Pet. Br. 3.

America's roadways than any ITS system deployed on 5.9 GHz, the Commission's decision to reallocate 45 MHz to unlicensed spectrum is well supported within the record. In actuality, it is the ITS licensees who have little to show in the record to support their claim to life-saving virtues flowing from their previous allocation.

Additionally, unlicensed spectrum provides public benefits that far exceed the advancement of crash avoidance technologies—*all* Wi-Fi technologies rely on access to unlicensed spectrum. By expanding access to unlicensed spectrum in the 5.9 GHz band, the Commission has enabled more affordable internet access in homes, workplaces, schools, and across a diverse set of industries. As the Commission explained "[u]nlicensed devices using such technologies as Wi-Fi have become indispensable for providing low-cost wireless connectivity…."[43]

Nothing made the importance of affordable Wi-Fi more apparent than the COVID-19 pandemic. Our nation continues to rely on Wi-Fi to work, attend school, contact health and social services, access critical news, order groceries, and connect with friends and family. The

[43] Report & Order, *supra* note 3 at ¶ 2. (JA____–___.)

Commission explicitly pointed to the wireless ISPs operating pursuant to special temporary authority, and their demonstrated increased ability to provide needed broadband services in rural America. This record evidence, combined with the real-world experiences of hundreds of millions of Americans every day, more than adequately supported the Commission's conclusion that reallocating 45 MHz for unlicensed access best serves the public interest.

The 45 megahertz that the Commission reallocated to unlicensed use does more than just address the general need for more unlicensed spectrum. Since this spectrum is directly adjacent to the most heavily-trafficked unlicensed spectrum in the U-NII-3 band, it creates "the first and only, unencumbered, contiguous channel of 160 MHz available for use at standard power."[44] This will accommodate next-generation services like Wi-Fi 6, which requires wider spectrum channels to support gigabit connectivity, and promote greater efficiency than disconnected bands of unlicensed spectrum would, even if they

[44] Reply Comments of New America's Open Technology Institute, American Library Association, Benton Foundation, Next Century Cities and Public Knowledge, *In the Matter of Use of the 5.850-5.925 GHz Band*, 4-5 (April 27, 2020). (JA____–___.)

equal the same amount of bandwidth when aggregated.[45] In addition, this newly-expanded 160 megahertz block of unlicensed spectrum can be used indoors at power levels that can cover a typical home with a single Wi-Fi router, whereas the 6 GHz spectrum above the ITS band, which the Commission made available for unlicensed use indoors in April 2020, is restricted to one-fourth as much power that will greatly limit its utility for consumers and business firms alike. The additional capacity provided by this uniquely-valuable band is necessary not just for next-generation services, but also to help relieve the congestion the current Wi-Fi bands are experiencing due to the dependence of mobile device users carriers for cellular offload. The issue of offloaded mobile data traffic is particularly important in the context of the indoor use of mobile devices, where more than 80% of mobile data is consumed.

Moreover, unlike the speculative far-off benefits of ITS services, Wi-Fi is real and can immediately put this spectrum to use. As Comcast explained in the record, "Much of

[45] *Id.* (JA____–___.)

the Wi-Fi equipment deployed today and operating in the widely used U-NII-3 band at 5.8 GHz

could bring consumers access to the 5.9 GHz spectrum with only software or firmware updates, a

benefit that would not be possible in any other band."[46] This means that instead of waiting decades to receive the alleged benefits of ITS services, the public can immediately start receiving the significant benefits of increased unlicensed capacity.

Getting and remaining online is now critical for many aspects of modern life and by opening up more spectrum to unlicensed use in the 5.9 GHz band, the Commission appropriately adapted its regulations to ensure that they still serve the public interest. Appellants and Intervenors fail to adequately explain why the Court should require the Commission to walk away from what is essentially a royal flush at the unlicensed spectrum table in order to keep playing at the same cold tables ITS licensees refuse to leave.

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[46] Comments of Comcast Corporation, *In the Matter of Use of the 5.850-5.925 GHz Band*, 8 (Mar. 9, 2020). (JA____–___.)

CONCLUSION

The Commission's conclusion that the public interest demanded a change in its strategy for managing the 5.9 GHz band is more than adequately supported by the record. Not only is 30 megahertz more than sufficient to accommodate public safety applications of ITS services, the 45 megahertz that the Commission reallocated to unlicensed technologies will provide public benefits that significantly exceed those promised by ITS licensees. Since the Commission's changes to its house rules for the 5.9 GHz band are based on more than a modicum of reasoned analysis, the Court should respect the Commission's decision and uphold the Report and Order.

Respectfully submitted,

Dated: October 20, 2021

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CERTIFICATE OF SERVICE

I hereby certify that I electronically filed the foregoing Brief of Public Knowledge as Amicus Curiae in support of Respondents with the Clerk of the United States Court of Appeals for the District Court of Columbia by using the appellate CM/ECF system on [date].

I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the appellate CM/ECF system.

Dated: October 20, 2021

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CERTIFICATE OF COMPLIANCE

1. This brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B) and 29(a)(5) and Circuit Rule 32-1 because it contains 4,159 words, excluding the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii).

2. This brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type style requirements of Fed. R. App. P. 32(a)(6) because this brief has been prepared in Microsoft Word for Mac version 15.40, using the Century Schoolbook typeface and a 14.0 font size.

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