March 6, 2020

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW Room TWA325
Washington, DC 20554

Re: Notice of Proposed Rulemaking (NPRM), ET Docket No. 19-138

Dear Ms. Dortch,

The Institute of Transportation Engineers (ITE) is pleased to provide comments to the Federal Communications Commission (FCC) regarding Docket 19-138, the Notice of Proposed Rulemaking (NPRM) that would realign the 5.9 GHz Band.

ITE is an international membership association of transportation professionals who work to improve mobility and safety for all transportation system users and help build smart and livable communities. Founded in 1930, ITE is a community of more than **16,000 transportation professionals**, including transportation engineers, transportation planners, consultants, educators, technologists, and researchers, with equal representation from the public and private sectors, who network through meetings, seminars, and technical publications.

ITE is extremely disappointed in the proposal advanced in this NPRM to reallocate spectrum that has been set aside for life-saving communications between vehicles and other users. The proposal to reallocate more than half of the 5.9 GHz safety spectrum for unlicensed uses comes at a time when more than 36,000 people are dying on our nation's highways each year, and more than 1.8 million were injured. Connected vehicle technologies have been identified by the National Highway Traffic Safety Administration (NHTSA) as having the potential to save tens of thousands of lives each year—but only if these technologies are given the certainty of a safety spectrum that is free from signal interference.

We believe strongly that reallocation of this spectrum will significantly reduce the life-saving potential of connected and automated vehicles.

Research published by the United States Department of Transportation (US DOT) this past December[1] has indicated signal interference "will occur, raising the question of the reliability of vehicle-to-everything (V2X) communications in this configuration. Without a high level of reliability, transportation safety will be impacted." To realign the spectrum against the judgment of transportation safety professionals and the recommendations of the Secretary of the U.S. Department of Transportation is shortsighted and misses a significant opportunity to save lives.

[1] https://www.transportation.gov/sites/dot.gov/files/docs/research-and-technology/360181/oobe-energy-59-safety-band-final-120619.pdf

As a founding member of the Road to Zero Coalition, ITE supports the acceleration of advanced technologies, including connected and automated vehicles (CAV), as a key strategy in achieving Vision Zero. In 2018, ITE issued a CAV position statement that includes support for fully protecting the currently designated 5.9 GHz safety spectrum for use by CAV applications and services.[2] That statement has been repeated in several filings with the Commission and with the US DOT.

Our submitted comments address the core premise in the NPRM: "the Commission requests comment on its proposal to designate the 45 megahertz of spectrum at 5.850-5.895 MHz for unlicensed operations." This is the main theme and a majority of the NPRM questions are derived from accepting this premise.

We don't accept this foundation! With that in mind, we offer the following comments on the overall premise.

We Can Save Lives Now

Reallocating this safety spectrum at a time when an average of 100 people per day are dying on our nation's roadways in motor vehicle crashes and CAV technology is just emerging in the marketplace is shortsighted.

According to a study released by the University of Michigan Transportation Research Institute in 2018, "up to 8.1 million car crashes and 44,000 deaths could be prevented if the federal government mandated connected vehicle technology now, rather than waiting even three years to develop and evaluate competing technologies.[3]

The FCC has not provided any assessment of the sufficiency of 30 MHz for all the anticipated transportation applications. To the contrary, the US DOT's preliminary assessment is that the reserved bandwidth will not be sufficient for the full scope of V2V and V2I applications. Recent analysis by the US DOT concluded that this NPRM and reallocating the spectrum may "defer accident reduction for another 5 years, given time to develop, standardize, and deploy equipment – either existing concepts in different spectrum or new concepts in existing spectrum."[4]

To realize the full potential of V2X technologies, we must follow the path that has led to widespread adoption of other technological advancements. That is, be willing to adopt a technology when it has been proven to meet the requirements of the applications which we want to deploy and then adapt to new technologies as they emerge. If we continually wait for the next technology that is in development to finally arrive, we will be waiting forever and we will miss the opportunity to save lives today.

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[2] https://www.ite.org/pub/?id=CFAD9221-B559-7D79-A09A-DAF0D549109A
[3] http://umtri.umich.edu/sites/default/files/The%20Cost%20Associated%20with%20Waiting%20to%20Deploy%20DSRC.pdf
[4] https://www.transportation.gov/sites/dot.gov/files/docs/research-and-technology/359811/preliminary-technical-assessment-fcc-59-ghz-nprm-05dec2019-final.pdf

Deployments of safety applications using Dedicated Short Range Communications (DSRC) and LTE-CV2X technologies using the 5.9 GHz spectrum are already in progress, and this deployment was poised to exponentially expand before the FCC created uncertainty in the marketplace by questioning the allocation of spectrum and specific technology choices.

Confusing Rhetoric from the FCC

As noted in US DOT's 2018 "Preparing for the Future of Transportation, Automated Vehicles 3.0," throughout the nation there were over 70 active deployments of vehicle-to-infrastructure (V2I) communications utilizing the 5.9 GHz band, and an even larger number when you consider all the possible V2X evaluations underway. Recent statistics from the US DOT indicate more than 18,000 vehicles are deployed with aftermarket V2X communications devices and over 1,000 infrastructure V2X devices have been installed at the roadside in 25 states.[5] A majority of these implementations are using Dedicated Short-Range Communications (DSRC) for "trusted" communications. DSRC is not only proven technology, but it is being deployed nationwide.

Just a few years ago three different automakers were already deploying or had announced plans to deploy DSRC in new production vehicles, potentially opening the floodgates to ubiquitous adoption.

Unfortunately, those success stories were met with skepticism and confusing rhetoric from the FCC, causing progress to stall in the wake of regulatory uncertainty. In several speeches during 2019, Chairman Pai referred to the 5.9 GHz spectrum as "lying fallow," and he referred to DSRC as a "promise unfulfilled."[6] [7] Commissioners O'Rielly and Rosenworcel went so far to send a letter to Toyota, after the company had publicly announced plans to deploy DSRC in production vehicles, and blatantly discouraged them from taking such action.[8]

Such rhetoric has caused dramatic uncertainty in the market, effectively stalling progress. The FCC's decision to suddenly stop awarding licenses for DSRC deployments halfway through 2019[9] further confused the market as to whether to proceed.

In multiple speeches, advocates of reallocating this spectrum, along with FCC Chairman Pai, have referred to "20 years of seeing these prime airwaves go largely unused," which misrepresents the true picture. The allocation in 1999 was made with full recognition by the Commission that further development was needed before deployment was possible. In fact, the FCC did not finalize the service rules and licensing procedures until 2005. Furthermore, the 5.9 GHz band is already shared with the satellite industry, and due to the need to work out a sharing agreement the first operational licenses weren't granted until 2008. Then in 2012-2013 the Middle-Class Tax Relief Act and FCC proceedings

[5] https://www.transportation.gov/sites/dot.gov/files/2020-02/59-fact-sheet-deployment-map_0.pdf
[6] https://docs.fcc.gov/public/attachments/DOC-357456A1.pdf
[7] https://docs.fcc.gov/public/attachments/DOC-360918A1.pdf
[8] https://www.fcc.gov/document/orielly-and-rosenworcel-letter-james-lentz-ceo-toyota-motor-na
[9] https://docs.fcc.gov/public/attachments/DA-19-1298A1.pdf

began questioning use of the band - introducing early uncertainty after only four years of real availability.

It is true that, for the reasons cited above, that it has been a long path from spectrum allocation to deployment. The technology has now been proven and deployments are moving forward, despite the uncertainty and doubt raised by previous FCC statements.

Transportation Safety is Different from Consumer Products

A key element of any spectrum exploration is maintaining a priority on safety applications. A communications medium for safety applications should not be selected based on its merit for other non-critical applications. Communication technologies that enable safety applications should remain the top priority, and they should be free from interference that could be caused by non-safety applications.

From a developmental perspective, this isn't a consumer convenience product; this is a life-saving product. Years of thorough development and testing is a necessity before these systems and products can hit the market. The FCC unfairly compares the development cycle of in-home Wi-Fi devices in its determination that DSRC is "stuck in neutral."[10] There is rightfully a different standard for the two technology types, and transportation safety experts have spent the time necessary to develop this technology to the point where connected vehicle technologies can meet those high standards.

The US DOT has conducted extensive research in cooperation with the automotive industry to ensure safety applications will work 100% of the time, not 95% or even 99%. When lives are at stake, careful deliberation is a must. If your in-home Wi-Fi device encounters interference or congestion, you can reboot it and all you've lost is a few minutes of streaming your favorite movie. If your V2X device encounters interference or congestion, a crash could occur and lives could be lost.

The FCC has cast an unfair expectation this past decade, and in its attempt to "move faster", is putting safety at risk. For example, insufficient research has been conducted to determine if the division of spectrum can be done without interfering with critical safety services.

In a US DOT report published in Dec 2019, "it is clear that interference will occur, raising the question of the reliability of V2X communications in this configuration. Without a high level of reliability, transportation safety will be impacted. These draft results also suggest that the rules and the division of spectrum, as described in the draft NPRM, may result in significant adjacent channel interference between the different radio services and thus may need reconsideration."[11]

[10] https://docs.fcc.gov/public/attachments/DOC-357456A1.pdf
[11] https://www.transportation.gov/sites/dot.gov/files/docs/research-and-technology/360181/oobe-energy-59-safety-band-final-120619.pdf

And despite agreeing to test for interference issues alongside the US DOT, this NPRM effectively abandons such testing in the middle of Phase 2 which the US DOT continues to believe is necessary to determine if spectrum sharing in the 5.9 GHz band is viable.[12]

Widespread Objections to the NPRM

In August of 2019, the American Association of State Highway and Transportation Officials (AASHTO) representing the state departments of transportation (state DOTs) of all 50 states, the District of Columbia, and Puerto Rico, sent a letter urging the Commission to "continue our nation's commitment to improving transportation safety by reserving the 5.9 GHz wireless spectrum for this critical purpose."[13] This letter - where all 50 states agreed on a unified message - is almost unprecedented in today's politically divisive climate. But it comes with the recognition that together, the public and private sectors have "already invested hundreds of millions of dollars to develop and deploy lifesaving [connected vehicle] technologies in the 5.9 GHz spectrum."

In November, once the Commission made public its intention to forego additional testing with the US DOT and propose an alternative allocation, US DOT Secretary Chao sent a strong letter that made it clear: DOT has "significant concerns with the Commission's proposal, which represents a major shift in the FCC's regulation of the 5.9 GHz Band and jeopardizes the significant transportation safety benefits that the allocation of this Band was meant to foster."[14]

The letter from Secretary Chao points out that Canada and Mexico also have dedicated the same 75 MHz to transportation, which positions North America to have a single standard for vehicles produced in the United States and, importantly, to keep connected vehicle capabilities from failing as vehicles move across our borders.

The Alliance of Automobile Manufacturers and Association of Global Automakers (who have now formed a single association) - along with the Intelligent Transportation Society of America, the 5G Automotive Association, AASHTO, American Trucking Associations and The Motor & Equipment Manufacturers Association - issued a statement in 2018 in response to the filing by NCTA-The Internet & Television Association suggesting that spectrum reserved for transportation safety services should be repurposed.[15] The message from this unprecedented coalition was also clear: "the entire 5.9 GHz band is needed to achieve the full benefit of these communication technologies in the years to come. These safety innovations require dedicated spectrum to ensure they work right every time without signal interference. Millions of dollars have already been invested in this effort, including incorporating connected vehicle technologies into infrastructure."

[12] https://www.transportation.gov/sites/dot.gov/files/docs/research-and-technology/359811/preliminary-technical-assessment-fcc-59-ghz-nprm-05dec2019-final.pdf
[13] https://www.transportation.org/wp-content/uploads/2019/08/2019-08-19-AASHTO-52-CEO-Letter-to-FCC-on-5.9GHz-Safety-Band.pdf
[14] https://www.highways.org/wp-content/uploads/2019/12/sec-chao-letter-5.9-11-20-19.pdf
[15] https://autoalliance.org/2018/10/24/multi-stakeholder-statement-preserving-5-9ghz-band/

Objections to this NPRM have come not only from the US DOT, from State & Local DOT's, from the automakers, and from transportation professionals at large - but also from Congress. The January 20, 2020 letter from the Transportation & Infrastructure Committee outlines widespread objections from 38 members of Congress. In addition to citing numerous reasons why this NPRM should be recalled, the letter concludes by clearly stating that "removal of this dedicated spectrum would be counter to our national transportation policy goals, as affirmed by the DOT and the Congress with the passage of the FAST Act in 2015."[16]

In the face of so many strong objections, we are confused as to how this proceeding can continue on its current path.

Closing Statement

As noted throughout this letter, not only are there significant safety benefits at risk - but there are tax-payer funded implications to changing utilization parameters for the currently reserved 5.9 GHz band. Many of the current development and deployment efforts are using all 7 channels, and a decision to give a portion to unlicensed Wi-Fi in the band would result in government agencies (federal, state, and local) having to spend more public-sector money to deploy new technology. Unless the FCC is willing and able to establish a pool of funds to enable a rip-and-replace scenario, they are establishing an unfunded mandate that will cost tax-payers unnecessary expenditures.

ITE believes that giving away spectrum that has been set aside for life-saving communications is unwise. Any changes to the allocation today would have the effect of hitting the "reset" button and erasing a decade or more of valuable lessons learned - and significantly setting-back nationwide deployment of life-saving technology.

A strong government role will be critical to ensure that the deployment of CAV improves the quality of life for all citizens. But the federal government's role should be to support nationwide deployment of interoperable systems, and not put up barriers to this outcome.

We are happy to meet with FCC technical and/or policy staff to discuss our concerns at your request.

Sincerely,

Randy McCourt, P.E., PTOE
International President
ITE Board of Direction

Jeffrey F. Paniati, P.E.
Executive Director and CEO
ITE

[16] https://republicans-transportation.house.gov/uploadedfiles/2020-01-22_full_ti_letter_to_fcc.pdf

Institute of Transportation Engineers

1627 Eye Street, NW, Suite 600, Washington, DC 20006 USA
Tel 202-785-0060 | **Fax** 202-785-0609 | **Web** www.ite.org