

# National Transportation Safety Board

Office of the Chair

Washington, DC 20594



August 29, 2022

ET Docket  
Federal Communications Commission  
Office of the Secretary  
Commission's Secretary  
445 12th Street SW  
Room CY-A257  
Washington, DC 20554

Attention: ET Docket No. 19-138; DA 22-611; FRS 92669

Dear Sir or Madam:

The National Transportation Safety Board (NTSB) has reviewed the Federal Communications Commission (FCC) public notice published at 87 *Federal Register* 38403 on June 28, 2022. The notice seeks comment on a joint filing by certain automakers, state departments of transportation, and equipment manufacturers requesting a waiver of the Commission's rules governing intelligent transportation system (ITS) operations to permit them to deploy cellular vehicle-to-everything (C-V2X) technology immediately in the upper 30 MHz (5.895-5.925 GHz) portion of the 5.850-5.925 GHz Band (5.9 GHz Band). The NTSB supports the granting of the waivers.

## Background and NTSB History of Relevant Recommendations

The NTSB has a long history of advocating for collision avoidance technology that relies on radio spectrum made available by the FCC. Since 1995, we have issued 8 recommendations, discussed below, pertaining to such technologies.<sup>1</sup> In 1995, after investigating a multivehicle crash in Menifee, Arkansas, we issued Safety Recommendation [H-95-46](#) to the FCC:<sup>2</sup>

Expedite rulemaking action on the allocation of frequencies that would enhance the development possibilities of collision warning systems.  
(H-95-46)

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<sup>1</sup> Use the NTSB's [CAROL Query](#) for more information about safety recommendations.

<sup>2</sup> See [Multiple Vehicle Collision With Fire During Fog Near Milepost 118 on Interstate 40, Menifee, Arkansas, January 9, 1995, and Special Investigation of Collision Warning Technology](#). Highway Accident Report NTSB/HAR-95/03 (Washington, DC: NTSB).

After the FCC allocated 75 MHz on a 5.9 GHz radio spectrum for ITS applications in 1999, we classified Safety Recommendation H-95-46 “Closed–Acceptable Action.”<sup>3</sup> We expressed full support for the FCC’s action, in as much as it allowed continued development of connected vehicle technology in support of collision avoidance systems, with the potential for improving transportation safety.

Using the radio spectrum made available by the FCC, the Department of Transportation and vehicle manufacturers developed connected vehicle technology that allowed vehicles to communicate vehicle to vehicle (V2V) or vehicle to infrastructure (V2I) to avoid potential collisions. In our 1998 study on passive grade crossings, we issued Safety Recommendation [I-98-3](#) to the National Highway Traffic Safety Administration NHTSA, among other stakeholders, to participate in the development of intelligent transportation systems that will be able to alert drivers to an oncoming train at passive grade crossings.<sup>4</sup> After investigating a 2012 crash in Chesterfield, New Jersey, in which a school bus traveled into the path of a refuse truck, we determined that, had connected vehicle technology been available on both vehicles, the school bus driver would have been made aware of the approaching truck and likely avoided the crash.<sup>5</sup> We issued Safety Recommendations [H-13-30](#) and [-31](#) to NHTSA to develop minimum performance standards for connected vehicle technology for all highway vehicles and require that the technology be installed on all new vehicles.<sup>6</sup>

The NTSB has also advocated for the inclusion of vulnerable road users in connected vehicle technology. In 2018, we issued Safety Recommendations [H-18-30](#) and [-31](#) to NHTSA to include motorcycles in V2V and V2I technologies.<sup>7</sup> In 2019, we issued Safety Recommendation [H-19-37](#) to NHTSA to expand vehicle-to-pedestrian research efforts to ensure that bicyclists and other vulnerable road users would be incorporated into the deployment of connected vehicle technologies.<sup>8</sup>

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<sup>3</sup> In 1998, Congress passed, and the President signed into law, the Transportation Equity Act for the 21st Century, which directed the FCC to consider the spectrum needs of ITS. In October 1999, the FCC allocated the 5.9 GHz band for Dedicated Short Range Communications (DSRC)-based ITS applications and adopted technical rules for DSRC operations (see “Dedicated Short Range Communications (DSRC) Service,” [FCC website](#), accessed August 12, 2022).

<sup>4</sup> See [Safety at Passive Grade Crossings; Volume 1: Analysis](#), Safety Study NTSB/SS-98/2 (Washington, DC: NTSB).

<sup>5</sup> See [School Bus and Truck Collision at Intersection Near Chesterfield, New Jersey, February 16, 2012](#), Highway Accident Report NTSB/HAR-13/01 (Washington, DC: NTSB).

<sup>6</sup> Safety Recommendations H-13-30 and -31 are classified “Open–Unacceptable Response.”

<sup>7</sup> (a) See [Select Risk Factors Associated with Causes of Motorcycle Crashes](#), Safety Research Report NTSB/SR-18/01 (Washington, DC: NTSB). (b) Safety Recommendations H-18-30 and -31 are classified “Open–Acceptable Response.”

<sup>8</sup> (a) See [Bicyclist Safety on US Roadways: Crash Risks and Countermeasures](#), Safety Research Report NTSB/SR-19/01 (Washington, DC: NTSB). (b) Safety Recommendation H-19-37 is classified “Open–Unacceptable Response.”

In 2021, the FCC decreased the size of the ITS communication spectrum and allowed potentially harmful interference from unlicensed devices, such as those that use wi-fi, jeopardizing the future deployment of connected vehicle technology.<sup>9</sup> In an effort to better understand the impact of the FCC's recent actions to reduce the spectrum available for transportation safety, the NTSB interviewed stakeholders affected by the FCC's rule change from government, industry, and academia about the safety benefits and maturity level of V2X technology and the reasons for the delayed deployment of the technology.<sup>10</sup> During the in-depth discussions with experts, the following three critical hurdles were identified as preventing the broad deployment of V2X: sufficiency of spectrum for advanced V2X applications, potential for harmful interference from unlicensed devices, and regulatory uncertainty.

More recently, in its investigative report on a multivehicle crash near Mt. Pleasant Township, Pennsylvania, the NTSB reiterated recommendations to NHTSA to develop connected vehicle technology performance standards for all highway vehicles and then to require connected vehicle technology in all vehicles.<sup>11</sup> In addition, the report highlighted the regulatory action by the FCC in 2021. As a result of that action, we recommended that the FCC implement appropriate safeguards to protect V2X communications from harmful interference from unlicensed devices, such as those that use wi-fi (Safety Recommendation [H-22-6](#)).

To address the reasons for the delayed deployment of the technology, we also issued a recommendation to the US Department of Transportation (DOT) to implement a plan for nationwide connected vehicle technology deployment that (1) resolves issues related to interference from unlicensed devices, such as those that use wi-fi; (2) ensures sufficient spectrum necessary for advanced connected vehicle applications; and (3) defines communication protocols to be used in future connected vehicle deployment (Safety Recommendation [H-22-1](#)).

## Connected Vehicle Technology Waiver

The United States currently faces a crisis on our roadways. NHTSA has estimated that 42,915 people lost their lives on our roadways in 2021.<sup>12</sup> Last year represented the greatest number of lives lost since 2005 and the greatest annual percentage increase in fatalities ever recorded by NHTSA (a 10.5 percent increase from the 38,824 lives lost

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<sup>9</sup> Several stakeholders petitioned the court to stay the FCC final rule. On August 12, 2022, the US Circuit Court denied the petition. (See [Statement On U.S. Circuit Court Decision Regarding 5.9 GHz Spectrum - ITS America](#), accessed August 12, 2022.)

<sup>10</sup> See the "V2X: Preserving the Future of Connected Vehicle Technologies," interview video series moderated by NTSB Board Member Michael Graham ([NTSB.gov](#)).

<sup>11</sup> See [Multivehicle Crash Near Mt. Pleasant Township, Pennsylvania, January 5, 2020](#). Highway Investigation Report NTSB/HIR-22/01 (Washington, DC: NTSB).

<sup>12</sup> See [Early Estimate of Motor Vehicle Traffic Fatalities in 2021](#), DOT HS 813 283, National Center for Statistical Analysis, NHTSA, accessed August 16, 2022.

in 2020). Connected vehicle technology would significantly reduce roadway fatalities, but it must be deployed as soon as possible. Granting the waiver to allow vehicle manufacturers, state DOTs, and equipment manufacturers to begin deploying C-V2X technology will allow these entities to continue their efforts to get this lifesaving technology onto our roads.

The FCC must also ensure that the remaining spectrum is free from harmful interference. The NTSB urges the FCC to act on Safety Recommendation [H-22-6](#) to implement appropriate safeguards to protect V2X communications from harmful interference from unlicensed devices, such as those that use wi-fi. The recommendation (as well as Safety Recommendation H-22-1) is currently classified "Open-Await Response." Both the National Electrical Manufacturers Association (NEMA) and the Alliance for Automotive Innovation have called for FCC resolution of the harmful interference issue.

## Conclusion

The NTSB supports the FCC granting the waiver for C-V2X development in the remaining 30-MHz spectrum. Such a move is necessary to allow auto manufacturers, infrastructure owner-operators, and others to move forward with the development of connected vehicle technology. Implementing this technology now is a critical step toward reducing the number of crashes and fatalities on our roadways. But more effort is needed. The FCC must also safeguard the remaining spectrum from harmful interference.

Thank you for the opportunity to provide comments.

Sincerely,

Jennifer Homendy  
Chair