

Questions for the Record Responses

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Public Knowledge

The Honorable Neal Dunn, M.D. (R-FL)

Under Chairman Ajit Pai in March of 2019, when advocating for opening the 6 GHz band for unlicensed use, Public Knowledge urged the FCC to treat incumbents' claims that they would not be able to share with unlicensed users with skepticism, stating that "The FCC should base policies on risk-informed interference assessments and not unrealistic worst-case scenarios." Given that position, why do you disagree with the determination reached by the FCC and its expert engineers in the 900 MHz proceeding?

Were the question simply testing as required by the FCC's rules adopted in 1995, see 10 FCCRcd 4695 (1995), Public Knowledge would simply focus on the nature of the testing (the 1995 Order requires joint testing between M-MLM licensees and users of unlicensed services to ensure that there is no "unacceptable levels of interference.") This was Public Knowledge's position when NextNav's predecessor in interest, Progeny, sought to activate its current location system in 2013. Public Knowledge joined the debate with others on how the FCC engineers should conduct their testing, but agreed that the issue in question was testing and that the FCC engineers would make the ultimate decision – which they did.

What Public Knowledge (and others) have objected to here is not a question of testing or trusting the proficiency of the FCC's engineers. It is NextNav's demand for rule changes and free spectrum that would fundamentally alter the very nature of the band. As stated in NextNav's [Petition to the FCC](#), and further elaborated in a subsequent [letter to the FCC](#). NextNav seeks elimination of the existing rule protecting unlicensed users in the 900 MHz band from "unacceptable levels of interference" (47 C.F.R. § 90.353(d)). It also seeks to eliminate the "safe harbor" for operation of unlicensed devices in the band that prevents them from being considered sources of harmful interference to M-LMS systems such as NextNav (47 U.S.C. § 90.361). Additionally, NextNav seeks a total restructuring of the band which would grant it a "windfall" of enhanced spectrum rights without any additional public interest obligations or any payment to the public for the expanded use of the public airwaves.

It is these conditions, not the expertise of the FCC's engineers, that Public Knowledge opposes. Indeed, if NextNav's proposed rules were adopted, the FCC engineers could find that NextNav operation would wipe out unlicensed use entirely and still "pass" the new standard based on NextNav's proposed rule changes.

By contrast, those supporting opening the 6 GHz band to unlicensed use (including Public Knowledge) did so only on condition that the new unlicensed use not interfere with existing licensees. Unlike the situation with NextNav, this is precisely the kind of engineering determination at which the FCC excels. Were NextNav simply seeking to activate a system in

accordance with existing rules governing the band, Public Knowledge would take the same position it took with regard to the 6 GHz band in 2019 and NextNav's predecessor in 2013.

The Honorable Troy Carter (D-LA)

To your knowledge, what work has the FCC done to complete transparent, independently validated interference testing with utilities operating real-world systems?

To our knowledge, the FCC has not completed transparent, independently validated interference testing with utilities operating real-world systems for the current NextNav proposal.

The FCC has built a record on *PNT resilience*, and NextNav and other parties have submitted technical studies and demonstrations into the record. But that is not the same thing as an FCC-directed, independently-validated test that examines how the proposed operations would affect utility systems under real-world conditions.

Utilities rely on 900 MHz systems for smart meters, distribution automation, fault detection, distributed energy resource monitoring, and other critical grid functions. These systems often operate in difficult environments, including rural areas, mountainous terrain, underground infrastructure, wildfire-prone regions, and places where fiber or commercial cellular service may not be available.

Before the FCC advances any proposal that could materially alter the usability of the Lower 900 MHz band, it should require a transparent test plan developed with affected utilities and other incumbent users. That plan should include independent engineering oversight, representative utility deployments, testing of dense/rural/difficult-propagation environments in particular, the release of test methods and results, and participation from relevant agencies and stakeholders such as DOE, NTIA, CISA, state utility regulators, and affected utilities.

The Honorable Kevin Mullin (D-CA)

- 1. Emergency alerts play an important role in keeping communities safe from quickly-evolving natural disasters, but their effectiveness depends on precise geotargeting. During last year's fires in Los Angeles, over 10 million people were accidentally sent an evacuation warning intended for a single neighborhood, triggering widespread panic and hindering emergency response efforts. A 2022 wireless emergency alert test by the FCC found that the needed geotargeting precision only worked for one-third of the devices that supported it. How might we strengthen our national PNT infrastructure to help improve the precision and reliability of emergency alerts?*

Strengthening the nation's PNT infrastructure can greatly improve the precision and reliability of emergency alerts, but it should be understood as one facet of public safety modernization. Precise Wireless Emergency Alerts depend on several systems working together – accurate alert origination by state and local officials, reliable IPAWS and carrier delivery, capable handsets, resilient communications networks, and location technologies that continue to work when GPS is unavailable or degraded.

A stronger national PNT architecture would help by improving the reliability of the location and timing information that devices and networks use to determine whether a person is inside or outside an alert area. That is especially important during wildfires, hurricanes, floods, and other emergencies where infrastructure may be damaged, GPS signals may be unreliable, and alert originators need to reach the right people quickly without causing unnecessary panic elsewhere.

Congress and the FCC should support a layered “system of systems” approach to PNT resilience. That means not only hardening GPS, but developing complementary and backup PNT capabilities across multiple systems, including terrestrial systems, broadcast-based approaches, satellite alternatives, network-based timing, and other resilient sources. No single private system should become the nation's sole answer to GPS vulnerability.

A layered approach would explicitly include inputs from local and regional PNT systems approved by the FCC for this purpose. Reconciling multiple inputs will require some re-engineering of WEA, and will introduce local and regional variation in accuracy based on the availability of systems within any given locality. But this question can be largely addressed by FCC oversight and development of technical standards. Additionally, it is important to remember that geofencing for WEA does not require the same precision as precision farming or other applications that require millimeter or greater accuracy. Accuracy down to a meter would be sufficient to ensure that those in danger receive timely warning without disrupting the lives of those outside the danger zone.

At the same time, PNT improvements must be paired with direct improvements to the emergency alerting system. The FCC should continue improving WEA geotargeting, require better transparency about device and carrier support for enhanced geotargeting, encourage regular real-world WEA testing, and help state and local emergency managers adopt alerting tools that validate polygons and reduce the chance of human or software error. Congress should also ensure that emergency managers have the resources, training, and technical support needed to use these tools effectively.

Finally, these systems should be built with privacy in mind. The goal should be accurate emergency alerting *without* unnecessary location surveillance. Wherever possible, location determinations should happen on the device, with strong limits on storage, secondary use, and disclosure of location data.

2. *Public Knowledge along with a group of public interest groups filed in opposition to the NextNav proposal. What are your concerns about what NextNav is proposing?*

Public Knowledge strongly supports efforts to strengthen the nation's positioning, navigation, and timing capabilities, including through developing robust complements and backups to GPS. GPS has become essential infrastructure for public safety, commerce, communications networks, agriculture, finance, and everyday consumer applications. Our concern is with NextNav's specific proposal, which would reconfigure the Lower 900 MHz band in a way that creates significant public interest costs while offering dubious public benefits. Public Knowledge has urged the FCC to prioritize PNT solutions that are reliable, secure, broadly available, and least disruptive to existing users.

The Lower 900 MHz band is a [heavily used band](#) that supports unlicensed Part 15 devices and a wide range of technologies relied on by consumers, businesses, schools, public safety users, utilities, agriculture, logistics, retail, and smart-city applications. Devices and protocols in this band include home security systems, medical devices, panic buttons, drones, automatic vehicle identification systems, and other Internet of Things (IoT) technologies. NextNav's proposal would reorganize this shared band, reallocate a substantial portion of it for full-power mobile 5G use, and compress existing licensed and unlicensed users into less spectrum. We are concerned that this would disrupt or degrade the performance of devices and services that consumers, businesses, and public safety entities already rely on.

Additionally, NextNav [proposes the elimination](#) of existing rules that prohibit "unacceptable levels of interference" to unlicensed devices in the 900 MHz band, would eliminate the "safe harbor" for unlicensed devices that cause harmful interference to new M-LMS systems (such as NextNav), and the rule requiring actual field testing in partnership with impacted stakeholder representatives. These rules were central to the FCC's original framework for this band to allow for productive use of multiple services – including an ecosystem of unlicensed devices on which nearly all consumers and businesses now rely for such things as RFID tags, security systems, and broadband access. That request undercuts their claims that existing users can continue operating in the band without harm.

Finally, we are concerned that the proposal appears to provide NextNav with a substantial private spectrum windfall without sufficient public interest obligations. NextNav seeks to exchange shared, low-power, limited-use spectrum rights for 15 megahertz of valuable, full-power, flexible-use spectrum; by its own description, the PNT function would use only a small fraction of the network's total capacity, with the remaining capacity potentially leased or sold to a mobile carrier.

At the same time, the proposal lacks clear, enforceable buildout timelines or universal service obligations. Indeed, NextNav's business plan appears to rely entirely on deployment on existing cell towers rather than expanding coverage beyond existing cell networks – which are notorious for their poor rural coverage. The FCC should not sacrifice the existing Lower 900 MHz ecosystem for a speculative private proposal that asks too much and – by its own admission – would deliver too little.