Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20544

In the Matter of	)	
	)	
Promoting the Development of Positioning, Navigation, and Timing Technologies and Solutions	)	WT Docket No. 25-110
	)	
	)	
	)	

COMMENTS OF THE INTERNATIONAL BRIDGE, TUNNEL & TURNPIKE ASSOCIATION

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INTRODUCTION AND SUMMARY

The International Bridge, Tunnel & Turnpike Association ("IBTTA")[1] respectfully responds to the Federal Communications Commission's ("Commission" or "FCC") *Notice of Inquiry* ("*NOI*") seeking comment on the promotion and development of positioning, navigation, and timing ("PNT") technologies and solutions.[2] IBTTA is the worldwide association for the owners and operators of toll facilities and the businesses that serve them. In the U.S., we represent 133 toll operators in 33 states. Our operator members are state departments of transportation, public toll authorities, municipal planning organizations, county and municipal governments, and private road operators. Our members also include infrastructure, technology, and engineering companies, and a network of service providers and equipment suppliers that support the tolling industry.

As the Commission recognizes in the first paragraph of the *NOI*, transportation management entities depend heavily on PNT solutions.[3] As part of the broader transportation ecosystem, tolling operators agree that the transportation sector in general and the tolling industry in specific greatly depend on PNT systems. It is therefore in our shared interest to ensure that American PNT systems are reliable, robust, and resilient. Consequently, IBTTA strongly supports the Commission's effort to strengthen the nation's PNT capabilities.

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[1] Founded in 1932, IBTTA has members in 23 countries on six continents. Through advocacy, thought leadership, and education, members are implementing state-of-the-art, innovative user-based transportation financing solutions to address the critical infrastructure challenges of the 21st century.

[2] *Promoting the Development of Positioning, Navigation, and Timing Technologies and Solutions*, Notice of Inquiry, FCC 25-20, WT Docket No. 25-110 (rel. Mar. 28, 2025) ("*NOI*").

[3] *Id.* ¶ 1.

To meet this goal, the *NOI* identifies an array of potential GPS supplements and alternatives. In considering this wide range of options, the *NOI* recognizes that it must determine whether the costs of a particular option outweigh its potential benefits.[4] The Commission also specifically seeks comment on whether any option would cause interference to existing spectrum users and whether that interference could be mitigated.[5] If the Commission analyzes NextNav Inc.'s ("NextNav") pending petition to reconfigure the 902–928 MHz band ("Lower 900 MHz band") as part of this proceeding, it should conclude that the costs of granting it would far exceed any benefits to strengthening PNT capabilities.[6] The NextNav proposal: (1) would disrupt important licensed and unlicensed services in the Lower 900 MHz band; (2) is not necessary to achieve the *NOI*'s goals and unlikely to produce a workable GPS supplement according to PNT experts; (3) would impose economic costs that far outweigh its potential benefits; and (4) conflicts with the Commission's spectrum policies and the Administration's regulatory principles.

I. THE NEXTNAV PROPOSAL WOULD DISRUPT IMPORTANT INCUMBENT OPERATIONS IN THE LOWER 900 MHZ BAND.

A. The Lower 900 MHz Band Supports Critical Licensed Tolling Operations.

As the Commission recognized almost two decades ago, the Lower 900 MHz band is home to a vibrant and valuable ecosystem of multilateration Location and Monitoring Service

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4 *Id.* ¶ 17.

5 *Id.* ¶ 34.

6 *Id.* ¶ 29 (seeking comment on NextNav's Petition for Rulemaking); *see Wireless Telecommunications Bureau and Office of Engineering and Technology Seek Comment on NextNav Petition for Rulemaking*, Public Notice, 39 FCC Rcd. 8695 (2024) ("*Public Notice*"); Petition for Rulemaking of NextNav Inc., WT Docket No. 24-240 (filed Apr. 16, 2024) ("NextNav Petition").

("M-LMS") licensees, non-multilateration Location and Monitoring Service ("non-M-LMS") licensees, unlicensed Part 15 users, federal incumbents, and Part 97 amateur radio operators.[7]

IBTTA's members use non-M-LMS licenses in the Lower 900 MHz band for short-range radio communications that enable electronic tolling facilities to communicate with vehicle-mounted transponders, or tags, as they pass through toll points. These systems facilitate the seamless automation of toll collection, allowing drivers to pay tolls by simply driving through toll plazas without stopping. Automated electronic tolling systems using licensed non-M-LMS spectrum have proliferated in the U.S. IBTTA members have deployed approximately 120 million electronic tolling tags in the U.S. and have constructed tens of thousands of fixed tolling points on American roads. In 2023, U.S. electronic tolling operators processed more than 8 billion transactions. IBTTA members rely on non-M-LMS licenses not only on highways but also in suburban and urban areas, promoting safe bridge and tunnel access and traffic management systems. IBTTA members also use the spectrum for commercial vehicle weigh station bypass systems, automating credentialing and compliance. The Commission's rules have enabled IBTTA members' non-M-LMS tolling licenses to coexist in the Lower 900 MHz band with NextNav's M-LMS location services for many years.

B. The NextNav Proposal Would Substantially Degrade Licensed State and Municipal Electronic Tolling Operations.

The *NOI* requests comment on whether any of the "proposed PNT technolog[ies] pose interference implications for other spectrum users."[8] IBTTA members agree that NextNav could operate as a GPS supplement under the Commission's *current rules* without creating an

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[7] *See Amendment of the Commission's Part 90 Rules in the 904–909.75 and 919.75–928 MHz Bands*, Notice of Proposed Rulemaking, 21 FCC Rcd. 2809 ¶¶ 3, 11, 13 (2006).

[8] *NOI* ¶ 34.

unacceptable risk of interference to tolling licensees. However, NextNav's proposal to subsidize a new PNT solution by converting more than 95 percent of its PNT spectrum to a new, far-higher-power commercial wireless network and the reduction of the spectrum available to tolling licensees, would cause pervasive, disruptive, and costly harmful interference to both roadside readers and in-vehicle transponders.

The current Lower 900 MHz regulatory regime authorizes tolling and other non-M-LMS licensees to use 14 megahertz of spectrum, including two megahertz shared on a co-equal basis with M-LMS operators such as NextNav, whose downlink operations cannot exceed 30 watts.[9] States, municipalities, and companies have made large investments in the nation's transportation infrastructure to share the band with NextNav in reliance of these FCC rules.

In 2024, however, NextNav proposed that the Commission discard the current Lower 900 MHz rules and swap 14 megahertz of M-LMS licenses for a far more valuable 15-megahertz flexible-use license—for free.[10] In addition, it asked the Commission to allow the company to use more than 95 percent of its proposed 15 megahertz of bandwidth for a *non-PNT* commercial high-power 5G broadband offering.[11] Importantly, NextNav does not need new technical rules to offer a PNT supplement—today's rules already permit it to offer a PNT supplement.[12] NextNav argues that it needs new rules not to permit it to serve as a GPS supplement, but to achieve a higher profit margin.[13]

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[9] 47 C.F.R. § 90.357(a).

[10] *Public Notice* at 5.

[11] Mike Dano, *NextNav's CEO Explains Her 5G Network Buildout Plan*, LIGHT READING (May 3, 2024), https://www.lightreading.com/5g/nextnav-s-ceo-explains-her-5g-network-buildout-plan.

[12] *See infra* Section II.A.

[13] *See* NextNav Petition at 22.

NextNav's proposed new rules would have a dramatic impact on the Lower 900 MHz band. NextNav's petition asks the Commission to (1) reduce the total amount of spectrum available for tolling licensees and all other non-M-LMS operations from 14 megahertz to 11 megahertz, (2) confine the remaining tolling and other non-M-LMS spectrum to the duplex gap of the new service, and (3) permit NextNav to operate at far higher powers.[14]

These changes would create serious risks of harmful interference to incumbent licensees. *First*, NextNav's proposed higher downlink power limits[15]—over 600 times its existing 30-watt limit—impose an unacceptable harmful interference environment on tolling systems, as discussed fully in IBTTA's opposition submitted in response to the Commission's *Public Notice* seeking comment on the NextNav petition.[16] *Second*, NextNav's proposed band reconfiguration for its new non-PNT high-power 5G broadband service increases the risk further for incumbent tolling systems that cannot accommodate a frequency shift—such as transponders using the TDM and ASTMv6 protocols which have fixed frequency specifications and have been designed around the existing band rules. *Third*, NextNav's proposed uplink band in the 902–907 MHz range would be a significant additional source of harmful interference if consumers with 5G devices operating in the band (as NextNav proposes) use their devices in their vehicles—as they will often transmit less than a meter from their vehicles' tolling transponders. *Fourth*, NextNav proposes to add mobile, portable, and point-to-point high-power transmitters that can be located much closer to a toll point than base stations, further exacerbating the interference risk.

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[14] *Public Notice* at 5–6 (citing NextNav Petition at 29).

[15] Power limits refer to base stations and fixed stations, with fixed stations including fixed point-to-point communications.

[16] Opposition of the International Bridge, Tunnel & Turnpike Association, WT Docket No. 24-240, RM-11989 (filed Sept. 5, 2024) ("IBTTA Opposition").

C. The Damage Caused to Incumbent Licensees by the NextNav Proposal Could Not Be Mitigated.

The Commission also seeks comment on whether interference caused by any of the PNT supplements identified in the *NOI* could be mitigated.[17] Tolling licensees have analyzed NextNav's proposal and met with NextNav. Unfortunately, neither NextNav's filings nor its discussions have identified effective mitigation of its proposal's interference risk.

First, geographic exclusion zones around existing tolling facilities would not be effective. NextNav has not demonstrated that there is a safe separation radius that can protect the nationwide tolling facilities while still allowing it to offer a nationwide high-power 5G broadband service. But even if a safe geographic separation radius could be established between high-power base stations and existing fixed tolling operations, it would still prevent tolling systems and commercial high-power 5G operations from growing and evolving. New exclusion zones would have to be established for each new or changed tolling facility. For example, to be effective, exclusion zones must restrict NextNav's high-power deployments in all urban centers that use or plan to use electronic tolling networks for bridge, tunnel, or roadway access to business and population centers or city-wide distributed traffic management systems. And if NextNav relies on the base stations of commercial 5G broadband companies for the deployment of its new service, then these companies would have to retest and establish new exclusion zones every time they deploy a new macro- or microcell or even alter the orientation of their existing transmitters.

Second, it would not be effective for NextNav to pay to retune tolling devices into the 907–918 MHz duplex gap of its proposed high-power service since tolling operators already

[17] *NOI* ¶ 34.

intensively use the entire existing 14 megahertz of available non-M-LMS spectrum.[18] Tolling facilities require the entire spectrum to support the processing of rapid, simultaneous transactions for vehicles traveling at high rates of speed. Reducing the available spectrum would inhibit tolling systems' ability to quickly query vehicle transponders, resulting in millions of nationwide missed reads. Tolling licensees also need all 14 megahertz of spectrum to effectively address other sources of potential interference in the band, including wind profile radar ("WPR") systems used by multiple federal agencies.[19] With an effective sensitivity of -165 dBm, these extremely sensitive WPR operations require toll facility operators to avoid operations in certain non-M-LMS frequencies, including channels in the 914–916 MHz portion of the band, reducing spectrum availability.[20] Further, the existence of NextNav's proposed new high-power network adjacent to the duplex gap would impose damaging adjacent-band interference on tolling licensees. But because the proposal would also reduce tolling spectrum and place tolling licensees in the duplex gap, it would leave these licensees with no ability to create a *de facto* guard band to protect their systems.

Third, relocating tolling licensees out of the Lower 900 MHz band is infeasible. NextNav has not identified any alternative spectrum bands that would effectively accommodate electronic tolling operations. Electronic tolling is part of the Intelligent Transportation Systems ("ITS") Radio Service.[21] But there are no other available and appropriate frequencies for electronic

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[18] *See* IBTTA Opposition at 20.

[19] NTIA, *902–928 MHz*, at 5–6 (2015), https://www.ntia.gov/files/ntia/publications/compendium/0902.00-0928.00_01DEC15.pdf.

[20] *See, e.g.*, Application for Waiver of Section 90.137b for Permanent Locations, *Interference Resolution Analysis* at 2, ULS File No. 0004904280 (filed June 7, 2012) (describing resolution of interference concerns regarding North Carolina Turnpike Authority operations at 914.75, 915.75, and 916.75 MHz to nearby WPR deployment).

[21] *See generally* 47 C.F.R. §§ 90.350–.393.

tolling in this service outside of the Lower 900 MHz band. LMS authorizations below 512 MHz have a bandwidth limitation of no more than 25 kilohertz in each of the three allotted sub-bands.[22] And the Commission has recently reaffirmed its decision to reserve the 30 megahertz of the 5.9 GHz band for "vehicle safety-related applications."[23] In addition, relocation would prevent licensees from deploying important applications, such as Automatic Vehicle Identification at weigh station sites specifically intended to accommodate multiple semi-trailer truck operations traveling at highway speeds.[24]

Fourth, any relocation of tolling operations would be extremely costly, time-consuming, and disruptive to consumers, businesses, and public and private toll operators, far exceeding the benefits of NextNav's petition, as discussed in Section III below. The U.S. has 120 million tolling transponders and tens of thousands of reader installations. Reissuing new equipment for each user and toll plaza would therefore require billions of dollars.

II. THE NEXTNAV PROPOSAL TO RECONFIGURE THE LOWER 900 MHZ BAND IS NOT NECESSARY TO ACHIEVE THE COMMISSION'S GOAL OF SUPPLEMENTING GPS.

Reconfiguration of the Lower 900 MHz band is not necessary to achieve the Commission's goal of establishing a robust and resilient system of systems to complement GPS for three key reasons. *First*, the Commission's existing Lower 900 MHz band rules already allow NextNav to serve as a GPS supplement, as evidenced by the fact that NextNav has *already implemented* TerraPoiNT with its current M-LMS licenses. *Second*, a range of alternative PNT solutions—many of which are more likely to succeed than the NextNav proposed solution—can

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[22] *See id.* § 90.355.

[23] *Use of the 5.850–5.925 GHz Band*, Order on Reconsideration, 39 FCC Rcd. 3641 ¶ 3 (2024).

[24] *See* IBTTA Opposition at 23–24 (providing additional detail on the infeasibility of relocating tolling operations outside of the Lower 900 MHz band).

achieve the Commission's objective without the extreme disruption of reconfiguring the Lower 900 MHz band. *Third*, even if the NextNav proposal to use PNT via 5G were a leading candidate, there is no technical reason these operations would need to be in the Lower 900 MHz band since existing sub-GHz 5G spectrum bands could also support PNT functionality without substantive interference to incumbent users.

A. NextNav's Current Licenses Already Allow It to Serve as a GPS Supplement.

The Commission's Lower 900 MHz rules already allow NextNav to build a nationwide GPS supplement. In fact, NextNav has already launched its TerraPoiNT system, which the company describes in a way that fits into the Commission's envisioned system of systems to complement GPS.[25] TerraPoiNT is a terrestrial-based network that uses NextNav's current "near-nationwide" 919.75–927.75 MHz licensed spectrum to support ground-based beacons that transmit ranging signals that can triangulate and determine the location of a device.[26] NextNav claims that TerraPoiNT already supplements GPS by providing more precise locations indoors and in urban areas, where GPS signals can often be either too faint or distorted.[27] In a recent Form 10-K filing, NextNav explained that TerraPoiNT "can be configured to provide NIST-traceable timing services independently of GPS" and can therefore serve as a "backup in the

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[25] *See NOI* ¶ 3 n.3 ("[W]e refer to . . . PNT 'systems of systems,' as meaning a combination of PNT technologies or solutions that will ensure PNT for users and protect against the threats to and vulnerabilities of GPS.").

[26] *NextNav TerraPoiNT: Accurate, Secure, Resilient 3D PNT Solutions*, NEXTNAV, https://nextnav.com/terrapoint (last visited Apr. 9, 2025); NextNav Petition at 11.

[27] NextNav Inc., Annual Report (Form 10-K) (Mar. 13, 2024), https://www.sec.gov/ix?doc=/Archives/edgar/data/0001865631/000121390024022183/nn-20231231.htm.

event of GPS disruptions" or even "a more robust primary solution."[28] NextNav claims that the TerraPoiNT system is already nearly nationwide with 92 total markets nationally.[29]

Importantly, the development of this PNT solution took place entirely under the Commission's existing rules for the Lower 900 MHz band. This demonstrates that the current regulatory regime is not an impediment to the deployment of TerraPoiNT as a GPS complement. In fact, NextNav's petition would result in it reducing the company's PNT spectrum resources, replacing the company's focus on supplementing GPS with a focus on a non-PNT commercial wireless service. Tellingly, according to its CEO, it would use the new rules to direct more than 95 percent of its proposed exclusive bandwidth away from the Commission's goal of improving PNT and toward increasing the company's profit margin.[30] If NextNav's PNT solution is not sustainable enough to be a complement to GPS without a massive subsidy from the government in the form of a new, free, nationwide commercial wireless license, then the Commission should use this proceeding to determine that NextNav's system is simply not reliable enough to be part of the nation's PNT system of systems.

B. Many Other PNT Solutions Are More Likely to Succeed Compared to NextNav's and Do Not Require Disruptive Re-banding.

The Resilient Navigation and Timing Foundation ("RNTF") is "a nonprofit, public benefit corporation that helps protect critical infrastructure by promoting resilient navigation and timing worldwide."[31] Its PNT experts have identified several fundamental challenges that render

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[28] *Id.*

[29] *Id.*

[30] Dano, *supra* note 11.

[31] *Who We Are*, RESILIENT NAVIGATION AND TIMING FOUNDATION, https://rntfnd.org/who-we-are (last visited Apr. 9, 2025).

NextNav less likely to succeed as a reliable GPS supplement as compared to other PNT solutions.[32]

Geographic Limitations.[33] As an initial matter, RNTF states that the NextNav proposal faces severe geographic limitations due to the fact that it is based on a system of short-range beacons.[34] NextNav's short-range system "would require an enormous amount of infrastructure to be practical as a wide-enough area GPS backup to meet the country's needs."[35] Accordingly, NextNav would need to "deploy radios, power, backhaul connections, and access towers on a scale similar to what took the cellular industry decades to accomplish."[36] As RNTF further notes, partnerships with 5G providers would result in significant coverage gaps in rural America, and cellular companies would have inadequate incentives to undertake this massive infrastructure project.[37] Other PNT solutions—such as Broadcast Positioning System ("BPS") and eLoran—do not face this challenge.[38]

Spectrum Reallocation.[39] As noted previously, the NextNav proposal requires a significant reconfiguration of the Lower 900 MHz band, which is critical to nationwide

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[32] Resilient Navigation and Timing Foundation, *Granting the NextNav FCC Proposal Will Not Solve the Country's GPS Challenge: A White Paper on Positioning, Navigation, and Timing Alternatives to NextNav* (2025) ("RNTF PNT Alternatives White Paper"), *as attached to* Letter from Dana Goward, to Marlene H. Dortch, Sec'y, FCC, WT Docket No. 24-240, RM-11989 (filed Feb. 12, 2025) ("Feb. 12, 2025 RNTF Letter").

[33] *See NOI* ¶ 32.

[34] RNTF PNT Alternatives White Paper at 8.

[35] *Id.*

[36] *Id.*

[37] *Id.*

[38] *Id.*

[39] *See NOI* ¶ 34 (seeking comment on spectrum resources needed for the implementation of various PNT solutions).

electronic tolling operations, millions of Part 15 device applications, and federal operations.[40] Relocating these incumbents to other frequencies will not only impose exorbitant costs but also present near-impossible logistical challenges. Yet, as RNTF notes, there are *dozens* of other terrestrial PNT solutions that do not require such spectrum reallocation.[41] For instance, Locata and PhasorLab use unlicensed Wi-Fi spectrum; BPS uses ATSC 3.0 digital television broadcasts; and eLoran uses 90 kHz to 100 kHz, which is already internationally allocated for radionavigation.[42]

Resiliency.[43] Furthermore, the NextNav solution has significant resiliency and security vulnerabilities. According to RNTF, a resilient PNT system integrates a diverse and continuously cross-checked set of time reference signals.[44] This ensures that if one reference time is wrong, then it can still be cross-calibrated across multiple systems. However, as RNTF explains, "the NextNav system is just as vulnerable to attack as GPS."[45] This is because "if the NextNav PNT system differs from GPS, there are no other PNT reference systems to determine which system is at fault."[46] Therefore, NextNav's proposed solution does not even provide additional resiliency as compared to the existing vulnerable GPS system.

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[40] *See supra* Section I.

[41] *See* RNTF PNT Alternatives White Paper at 7–8; Feb. 12, 2025 RNTF Letter at 2 ("Over twenty other companies offer terrestrial technologies that provide backup and alternative sources of timing and/or positioning and navigation. To our knowledge, none require or are requesting additional spectrum to subsidize their efforts.").

[42] *See* RNTF PNT Alternatives White Paper at 7–8.

[43] *See NOI* ¶ 36 (seeking comment on the resiliency of a proposed PNT technology).

[44] RNTF PNT Alternatives White Paper at 6.

[45] *Id.* at 9.

[46] *Id.*

International Limitations. Finally, it is very unlikely that the NextNav proposed solution could be deployed "internationally in a cost-effective manner."[47] NextNav's new proposed 15-megahertz spectrum block is not internationally harmonized and does not line up with a 3GPP 5G NR band.[48] These limitations would therefore hinder global deployment of the NextNav system since it would face interoperability challenges, lack of vendor interest, and potentially even regulatory and licensing barriers in other countries.

C. A 5G-Based PNT Service Can Make Use of Existing 5G Bands at a Lower Cost and with Less Impact on Existing Users.

Finally, NextNav's proposal is not necessary to achieve the Commission's goal of creating a GPS backup because NextNav's proposed approach of using 5G facilities to transmit PNT signals could be implemented in existing 5G bands and using existing infrastructure.[49] While IBTTA does not take a position on whether the Commission should pursue such an approach, the FCC should recognize that a 5G-based-PNT approach does not require the Lower 900 MHz band and likely could be implemented with lower costs and less disruption to existing users.

While using an existing 5G band would mean that NextNav would not win the windfall it seeks from its Lower 900 MHz band proposal, such an approach would be more consistent with long-standing Commission spectrum policy. NextNav is asking the Commission to adopt new Lower 900 MHz rules based on the claim that without a spectrum subsidy it will not be profitable enough to justify providing a standalone PNT service. The Commission should not use spectrum policy to create such a subsidy, especially when doing so would create substantial

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[47] *NOI* ¶ 32.

[48] *See* 3GPP TS 38.101-1 V19.1.0, at 35–36 tbl. 5.2-1 (2025).

[49] *See* IBTTA Opposition at 28–29.

damage to other incumbent licensees' operations. Instead, if the Commission determines that a 5G-based-PNT approach is worth pursuing, it could consider ways to make offering such a service permissible and effective in existing 5G bands.

III. THE ECONOMIC COSTS OF GRANTING THE NEXTNAV PROPOSAL FAR OUTWEIGH THE BENEFITS.

NextNav contends that its proposed reorganization of the Lower 900 MHz band offers an economically viable backup solution for GPS and estimates the value of the new terrestrial PNT network to be $14.6 billion.[50] However, a new economic study conducted by economist and former FCC Commissioner Harold Furchtgott-Roth demonstrates that NextNav's economic study measures benefits that are not appropriately assigned to the petition and does not even attempt to measure its costs.[51] Commissioner Furchtgott-Roth's study finds that the economic benefit of the petition would be only between $1.2 billion and $2.1 billion and estimates it would impose tens of billions of dollars in costs. Therefore, the Furchtgott-Roth study concludes that economic costs associated with the NextNav proposal far outweigh the benefits.

A. NextNav's Proposal Results in Few Benefits.

NextNav's proposal seeks to reorganize the Lower 900 MHz band to create a new 15-megahertz channel for high-power 5G broadband.[52] The NextNav study estimates the value of the new terrestrial PNT network to be $14.6 billion based on the premise that only by granting the NextNav petition can the FCC avoid the significant economic costs that would result from a

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[50] Coleman Bazelon & Paroma Sanyal, Brattle Group, *Public Benefits of Reconfiguring the Lower 900 MHz Band to Support a Backup and Complement to GPS* (2024) ("Brattle Group Study"), *as attached to* Letter from Robert Lantz, NextNav Inc., to Marlene H. Dortch, Sec'y, FCC, WT Docket No. 24-240, RM-11989 (filed Oct. 21, 2024).

[51] Harold Furchtgott-Roth, Furchtgott-Roth Economic Enterprises, *An Economic Analysis of NextNav's Proposal for the Reallocation of Spectrum and the Modification of Rules in the Lower 900 MHz Band* 21 (2025) ("Furchtgott-Roth Study"), *as attached*.

[52] NextNav Petition at iv.

GPS outage.[53] However, as the Furchtgott-Roth study explains, the estimated benefits should not include the economic value of avoiding GPS outages because (1) the current FCC rules already allow NextNav to offer a GPS backup system; and (2) there are dozens of other GPS backup solutions besides NextNav.[54] Therefore, the newly proposed NextNav solution is not required to back up GPS.

Instead, the Furchtgott-Roth study concludes that the real value created by the NextNav proposal is a newly created 15-megahertz channel for high-power 5G broadband. After applying the prevailing market rates for sub-1 GHz spectrum bands and discounting for factors such as current encumbrances and an estimated five-year timeline for clearing the spectrum, Commissioner Furchtgott-Roth concludes that the commercial value of the new 15-megahertz channel would range between $1.2 billion and $2.1 billion. Commissioner Furchtgott-Roth finds several factors that would reduce the market value of the 15-megahertz channel further, such as the primary allocation of government stations and ISM devices and the lack of international harmonization for the new channel but does not include these discounting factors in his estimate.[55]

B. The Costs of the NextNav Proposal Are High.

The NextNav study only estimated the *benefits* associated with the NextNav proposal but did not analyze its *costs*. The Furchtgott-Roth study estimates the costs associated with the NextNav proposal to be tens of billions of dollars. Notably, Commissioner Furchtgott-Roth estimates the cost to retune and replace Part 15 devices alone to be between $27 billion and

[53] Brattle Group Study at 30.

[54] Furchtgott-Roth Study at 2–3, 21–28.

[55] *Id*. at 29.

$33 billion.[56] In addition, as discussed previously, he estimates the costs imposed on tolling licensees to be at least $6.8 billion. These costs include approximately $1 billion to replace the 120 million tolling transponders currently in circulation; approximately $300 million to upgrade roadside facilities; and at least $5.5 billion in revenue reduction for States, municipalities, and other tolling entities from degraded system performance.[57] This estimate does not account for the additional costs associated with widespread service disruption and consumer confusion associated with replacing the millions of tolling transponders. It also does not account for the opportunity cost of lost flexibility for expanded toll operations and constraints of siting future tolling locations. With an estimated economic benefit of $1.2 billion to $2.1 billion and an estimated cost of tens of billions of dollars, the costs of the NextNav proposal clearly outweigh its benefits.

IV. THE NEXTNAV PROPOSAL IS INCONSISTENT WITH THE COMMISSION'S SPECTRUM POLICIES AND THE ADMINISTRATION'S REGULATORY PRINCIPLES.

In addition to creating harmful interference and imposing costs that outweigh its benefits, the NextNav petition is also inconsistent with long-standing FCC spectrum policies and the Administration's regulatory principles. NextNav's proposed spectrum swap would require the Commission to gift the company exclusive, nationwide broadband spectrum rights that it could then lease at a premium. This means the Commission would use its regulatory power to intervene in the marketplace to subsidize one company, undermining the operations of all other Lower 900 MHz band licensees—and giving NextNav an advantage over its competitors in the market for PNT services. As Commissioner Furchtgott-Roth explains, this "is not sound public policy

[56] *Id.* at 20 (citing Comments of Digi International Inc. at iii, WT Docket No. 24-240 (filed Sept. 5, 2024)).

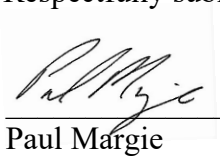
[57] *Id.* at 15–18.

[and] would result in a significant windfall to NextNav."[58] If policymakers determine that having a private company operate a terrestrial PNT network at a financial loss is in the public interest, then the U.S. can do so through direct subsidization. But the Commission should not do so through the inefficient and roundabout mechanism of gifting one company a spectrum windfall that degrades other existing operations in the Lower 900 MHz band.

CONCLUSION

IBTTA strongly supports the Commission's efforts to strengthen the nation's PNT capabilities and is committed to continuing to be a good neighbor to NextNav's existing PNT services under current FCC rules. But in analyzing options for GPS supplements, the Commission should conclude that the costs of granting NextNav's petition are far greater than its benefits. Fortunately, the *NOI* identifies many other promising options to supplement GPS.

Respectfully submitted,



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[58] *Id.* at 29.