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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
)
Amendment of Part 90 of the Commission’s Rules) WP Docket No. 07-100

COMMENTS OF APCO INTERNATIONAL

The Association of Public-Safety Communications Officials-International, Inc. (APCO)¹ submits the following comments in response to the Commission’s Sixth Further Notice of Proposed Rulemaking in the above-captioned proceeding.² The Commission seeks comment on how to increase investment in and use of the 4.9 GHz spectrum band, which consists of 50 MHz of spectrum allocated for public safety use.³

I. Introduction and Summary

Public safety’s dedicated access to the 4.9 GHz band must be preserved. Public safety is using the 4.9 GHz band to support localized, bandwidth-intensive applications for mission critical use cases. Other spectrum and wireless broadband options available to public safety are not substitutes for the 4.9 GHz band, which is uniquely-suited for existing use cases and presents

¹ Founded in 1935, APCO is the nation’s oldest and largest organization of public safety communications professionals. APCO is a non-profit association with over 30,000 members, primarily consisting of state and local government employees who manage and operate public safety communications systems – including 9-1-1 Public Safety Answering Points (PSAPs), emergency operations centers, radio networks, and information technology – for law enforcement, fire, emergency medical, and other public safety agencies.

² In the Matter of Amendment of Part 90 of the Commission’s Rules, WP Docket No. 07-100, *Sixth Further Notice of Proposed Rulemaking*, FCC 18-33 (rel. Mar. 23, 2018) (“FNPRM”).

³ *Id.* at paras. 1, 3.

opportunities for innovation. The Commission should not abandon its goal of ensuring that “public safety enjoys maximum access to emerging broadband technologies.”⁴

The Commission can take immediate steps to help public safety take greater advantage of the 4.9 GHz band. APCO and others have recommended numerous changes. Key among these is for the Commission to require frequency coordination to provide public safety with the confidence that communications will be reliable and free from interference. Frequency coordination should be limited to certified public safety pool coordinators. Additional changes to increase flexibility will further encourage investment by public safety. Rather than adopt a band plan, the Commission should permit public safety frequency coordinators flexibility, both in terms of channel assignment and power limits, to maximize efficient use of the spectrum.

The Commission should make clear that the 4.9 GHz band will be preserved for public safety use, but continue to pursue options to spur use of the band. APCO is open to exploring a sharing framework for this band that would allow use for non-public safety purposes, provided a proven sharing mechanism is in place that ensures priority and preemption for public safety users. Public safety agencies should not be put in a position to lease or otherwise put a price on their use of the 4.9 GHz band.

II. Public Safety Needs the 4.9 GHz Band

A. Public Safety is Using the 4.9 GHz Band for Mission Critical Communications

Many public safety agencies depend on the 4.9 GHz band to support a variety of mission critical communications needs. Agencies report using the 4.9 GHz band for point-to-point (P-P) and point-to-multipoint links (P-MP) (which are especially useful for connecting fire/rescue

⁴ In the Matter of The 4.9 GHz Band Transferred from Federal Government Use, WT Docket No. 00-32, *Second Report and Order and Further Notice of Proposed Rulemaking*, FCC 02-47, para. 1 (rel. Feb. 27, 2002) (“2nd R&O & FNPRM”).

stations and radio networks in rural areas), data and video backhaul, real-time video surveillance, controlling tactical robots, airborne video, broadband connectivity, and wireless fixed “hotspots” for high-speed public safety data sharing.

APCO disputes the claim that no more than 3.5% of potential licensees use the band.⁵ This is misleading because the Commission is not taking into account how the band is actually licensed. For example, a network of hotspots deployed under a single countywide geographic license can serve multiple agencies, and a single fixed P-P link could carry data traffic between communications centers supporting multiple eligible entities. Quantifying the use of the 4.9 GHz band is difficult due to the nature of the licensing approach for the band. Some public safety entities are using the entire band, and a number of agencies reported to APCO that they intend to increase use of the 4.9 GHz band.

Any underutilization of the band in certain areas should not be interpreted as a lack of interest on the part of public safety or used as a justification for reallocating the band. Public safety communications systems are designed for the worst case, highest use scenario, meaning that routine use will not approach maximum capacity. First responders are still in the relatively early stages of incorporating wireless broadband technology into their operations.⁶

The Commission’s original vision that the 4.9 GHz band be used for emerging broadband technologies requires that the band has room to accommodate innovation that drives new use cases. As the Commission noted, public safety providers’ mission “should not be compromised by inadequate communications, or lack of access to state of the art technologies that can enhance

⁵ FNPRM at para.1.

⁶ Public safety’s embrace of broadband technology is becoming increasingly evident by the deployment of FirstNet, the need for multimedia capability in Wireless Emergency Alerts, and the anticipated modernization of 9-1-1 networks to support IP-based, broadband communications. All of these developments will in turn spur increased use and dependence upon the 4.9 GHz band as a complementary spectrum tool.

their abilities to conduct critical operations.”⁷ Dedicated spectrum can facilitate innovation for public safety. As discussed below, the Commission can make the 4.9 GHz band a more useful option for emerging public safety technologies through immediate actions such as increasing flexibility for use in the band and requiring frequency coordination to ensure protection from interference.

B. Other Public Safety Spectrum and Wireless Broadband Options Are Not Substitutes for the 4.9 GHz Band

Public safety does not have spectrum options that could replace the 4.9 GHz band. Public safety land mobile radio allocations in the VHF, UHF, 700 MHz, and 800 MHz bands are limited to basic voice communications and some low-bandwidth data with permitted bandwidths typically on the order of 12.5 kHz and 25 kHz. The T-Band is further limited to 11 metropolitan areas.⁸ Thus, even where channels are available for licensing, these other bands should not be viewed as alternatives to, or interchangeable with, the 50 MHz that the 4.9 GHz band affords.

Other mobile broadband options, including FirstNet, are not substitutes for the 4.9 GHz band. The 4.9 GHz band allows public safety agencies to tailor localized solutions to their specific operational and geographic needs. This complementary role for the band is consistent with the Commission’s recognition of the need for localized broadband communications solutions, such as those possible in the 4.9 GHz band, to exist alongside macro-network solutions.⁹ This need has not gone away.

III. The Commission Should Take Immediate Actions to Facilitate Public Safety’s Use of the 4.9 GHz Band

⁷ 2nd R&O & FNPRM at para. 69.

⁸ See 47 C.F.R. § 90.303.

⁹ 2nd R&O & FNPRM at paras. 26, 30 (stating “the narrowband and wideband communications provided by the 700 MHz band are better suited for longer-range communications over larger service areas”) (explaining that the designation of 4.9 GHz for public safety “takes into account the varying benefits associated with different spectrum”).

The public safety community has been waiting on the Commission to take actions that will make the 4.9 GHz band a more attractive option for mission critical communications. APCO and the National Public Safety Telecommunications Council (NPSTC) have conducted research and submitted detailed proposals for changes to the licensing rules that would increase public safety's use of the 4.9 GHz band.¹⁰ Yet, in the six years since the most recent Further Notice of Proposed Rulemaking, the Commission has not adopted any of these measures. Immediate changes to increase flexibility and protect public safety operations will drive public safety use of the 4.9 GHz band.

A. Ensure Public Safety Use of the 4.9 GHz Band is Free from Interference by Requiring Frequency Coordination by Public Safety Coordinators

APCO supports the Commission's proposal to require certified frequency coordination for licensing in the band rather than "self-coordination" or "notice and response."¹¹ Public safety communications require reliable, interference-free access to spectrum. Frequency coordination, which provides assurance that communications will be available during emergency operations, is the most effective way to promote public safety's use of and investment in the band.

APCO agrees with the Commission's proposals for incumbent licensees, to set a one-year timetable to provide data in ULS¹² and to waive frequency coordination requirements for one

¹⁰ In response to requests from the FCC to identify ways to promote the best and most efficient use of this band, APCO convened a 4.9 GHz Task Force consisting of 32 public safety communications practitioners. The goal of this Task Force was to provide recommendations to the FCC as the agency explores changes to applicable regulations. The Task Force was convened on June 1, 2015 and presented its report to the Public Safety and Homeland Security Bureau on September 28, 2015. *See* 4.9 GHz Task Force Report of APCO, WP Docket 07-100, PS Docket No. 06-229, WT Docket No. 06-150 (filed Sept. 28, 2015) ("Task Force Report"). *See also* 4.9 GHz National Plan Recommendations, Final Report of NPSTC, WP Docket 07-100, PS Docket No. 06-229, WT Docket No. 06-150 (filed Oct. 24, 2013) ("NPSTC Report").

¹¹ FNPRM at para. 27.

¹² APCO's support for using ULS for tracking 4.9 GHz licenses is discussed in greater detail below.

year.¹³ Allowing incumbents to waive frequency coordination for their existing operations, so long as they enter the required license data in ULS within one year, will not harm new entrants or deter investment in the band. Submitting the data to ULS will protect any investments that incumbents have already made in the band. APCO recommends a temporary licensing freeze on the 4.9 GHz band during the one-year period in which incumbent licensees provide technical information. This will allow the Commission and frequency coordinators to work from accurate technical information for the consideration of new applications.

Coordination in the 4.9 GHz band should be limited to public safety frequency coordinators. The longstanding requirement of “representativeness” of the users of the frequencies to be coordinated¹⁴ will be valuable for coordinating operations in the 4.9 GHz band. Public safety coordinators share a community of interest and often have direct relationships with the agencies and first responders they serve, and any Regional Planning Committees (RPCs). Non-public safety coordinators will not be positioned to understand the unique needs of public safety users, protect both new and incumbent users from harmful interference, and make coordination decisions in the best interests of public safety.

B. Maximize Flexibility

APCO agrees with the Commission’s approach to favor technology-neutral rules and avoid adoption of mandatory standards,¹⁵ and would go a step further to support maximum flexibility to promote increased use and innovative technological approaches to the 4.9 GHz

¹³ FNPRM at paras. 36-38.

¹⁴ See Frequency Coordination in the Private Land Mobile Radio Services, PR Docket No. 83-737, *Report and Order*, 103 FCC 2d 1093 (1986).

¹⁵ FNPRM at para. 46.

band. The Commission should avoid mandating a national band plan and take a number of steps to permit more flexible use of the 4.9 GHz band by public safety.

i. Defer to Public Safety Frequency Coordinators for Development of a Band Plan

The Commission should not specify a band plan for the 4.9 GHz band. Instead, public safety frequency coordinators should be permitted flexibility to assign channels in a way that maximizes spectrum efficiency while protecting public safety from harmful interference. The members of the Public Safety Communications Council¹⁶ have already begun discussing coordination procedures that could be employed for the 4.9 GHz band. After the Commission acts, APCO would look to work with other stakeholders such as NPSTC and the National Regional Planning Council to develop a national plan for conducting frequency coordination.

The Commission proposes to allow RPCs to file new and amended regional plans for Commission review and approval to reflect region-specific needs or considerations.¹⁷ APCO strongly favors adherence to the national coordination plan that will be developed by public safety frequency coordinators but is open to granting RPCs limited options for developing regional deviations. Specifically, APCO does not oppose the Commission's proposal to allow RPCs discretion over (1) limiting channel aggregation to 20 MHz; (2) incorporating an additional channel designated for specialized use; (3) placing limits on the use of P-P links in urban areas or imposing more stringent antenna requirements or other technical parameters to allow greater channel use; and (4) polarization.¹⁸

¹⁶ The PSCC is a federation of FCC-Certified public safety frequency coordinators. The PSCC cooperatively works with each of the coordinators to develop coordination procedures and to assure that the public safety channels can be utilized with minimal interference.

¹⁷ FNPRM at para. 41.

¹⁸ *Id.* at paras. 10, 42.

The Commission also proposes that any application where the power flux density into an adjacent region border exceeds -109 dBW/m² would be flagged and sent to the adjacent RPC for review.¹⁹ APCO suggests that the Commission reconsider this proposal, consistent with the relatively limited role described above for RPCs to develop rules for the 4.9 GHz band.

ii. Afford Discretion to Coordinators Concerning Aeronautical Mobile and Robotic Use

Consistent with APCO's recommendation that the rules maximize flexibility for the 4.9 GHz band, APCO disagrees with the proposals to limit aerial transmitted information to video payload,²⁰ and to designate Channels 1-5 for aeronautical mobile and robotic use.²¹ These 4.9 GHz use cases illustrate the benefit of the Commission taking a flexible approach and deferring to public safety frequency coordinators.

Aeronautical and robotic uses tend to be ad hoc and often with little advance notice. Setting aside five channels for these purposes in the Commission's rules would mean that this portion of the band would be inefficiently used. At the same time, a 5 MHz cap places an arbitrary limit on use that may require greater bandwidth. For example, in a survey conducted by APCO's Radio Spectrum Task Force, multiple respondents indicated that tactical robots presently use, or would use, a bandwidth greater than 5 MHz. To promote the most efficient spectrum use, APCO recommends that the Commission avoid limiting any channels to specific uses, leaving public safety frequency coordinators to determine how best to deploy and coordinate such uses as they arise. The Commission could, however, indicate a preference for

¹⁹ *Id.* at para. 29.

²⁰ *Id.* at para. 16.

²¹ *Id.* at paras. 15-16.

certain uses, such as putting aeronautical mobile (and unmanned aircraft systems and UAS) and robotic uses in Channels 1-5, to guide public safety frequency coordinators.

iii. Allow Unmanned Aerial System Use

The Commission proposes to prohibit use of the 4.9 GHz band for aircraft command and control, and prohibit use of unmanned aerial systems.²² Consistent with the goals of flexibility and support for emerging technologies, APCO would encourage the Commission to allow use of the band for UAS operation. Public safety use of UAS during emergency response is increasing. For example, UAS can be used to perform search and rescue missions or survey wildfires. To the extent that the Commission can maximize flexibility for the 4.9 GHz band, it should do so.

iv. Permit Aggregation Up to 50 MHz

The Commission seeks comment on more flexible aggregation limits and proposes to expand the existing channel aggregation limit to 40 MHz.²³ To permit maximum flexibility in this band and facilitate the development of innovative broadband uses, the Commission should expand the aggregation limit to the full 50 MHz available in the band. This could be especially important for enabling public safety to deploy high-bandwidth solutions and new communications technologies.

v. Power Limits Should Maximize Spectral Efficiency and Broadband Use

Current power restrictions limit broadband throughput and range, and discourage the use of larger and more efficient antennas. APCO supports modification of the current Part 90 rules to allow an Effective Isotropic Radiated Power (EIRP) equivalent to Part 101 levels. Higher EIRP levels encourage agencies to deploy larger antennas to achieve higher broadband data

²² *Id.* at para. 16.

²³ *Id.* at paras. 9-10.

rates, compensating for the loss of system gain of the equipment when using higher order modulation schemes. This flexibility will enable broadband data rates at longer distances in rural areas, and in the event that multiple microwave links in a chain are required, fewer hops will be required to traverse the same distance, reducing overall equipment costs. Larger and more efficient antennas (in conjunction with the effective use of link polarization) will be important tools to maximize the frequency reuse of P-P channels and reserve more spectrum for mobile use. There is trade-off between broadband speeds and costs, and APCO supports rules that allow more options for the user.

APCO agrees with the NPSTC proposal for a formula limiting EIRP for shorter paths similar to Part 101, provided that it takes into account the worst case planning conditions that require higher fade margins (tropical climates, flat terrain, coastal paths, and areas with higher reflectivity/refractivity, etc.).

APCO supports the Commission's proposal not to place restrictions on multiple modulation rates and MIMO antenna technologies.²⁴ However, fewer options are available to shield base and mobile operations from interference originating from P-P systems, especially in a reflective mobile environment susceptible to significant depolarization effects. APCO proposes that users deploying MIMO technologies provide double entries in the ULS database for each transmitter/receiver (one for horizontal and one for vertical).

vi. Point-to-Point and Point-to-Multipoint Should be Accorded Primary Status

APCO agrees, in part, with the Commission's proposal to allow licensees to use individual 1-MHz bandwidth Channels 14-18 for permanent fixed P-P and P-MP operations on a

²⁴ *Id.* at para. 58.

primary basis.²⁵ All public safety operations in the 4.9 GHz band should have primary status. However, consistent with the flexible approach described above, fixed link operations should not be limited to a particular part of the band.²⁶ The Commission should refrain from specifying channels for particular operations but instead could indicate preferences to guide public safety frequency coordinators.

Proper frequency coordination will make it possible for more users to co-exist on a primary basis, resulting in more efficient spectrum usage. While APCO does not believe that Channels 14-18 should be reserved by rule for a specific application, the Commission might indicate a preference as in the case of aeronautical and robotic use. Frequency coordinators could, for example, develop a common approach to concentrate fixed links as close as possible to the high end of the band using proper frequency planning techniques (as outlined in TIA Technical Service Bulletin 10F/G) such as deploying high performance antennas, effective use of polarization, and synchronized transmitters at hub sites. On the contrary, base and mobile systems could be concentrated lower in the band to simplify frequency coordination.

C. Improve Information Management for the 4.9 GHz Band to Enhance Frequency Coordination and Promote Efficient Use of the Spectrum

APCO agrees with the Commission's proposals to (1) require incumbent licensees and new applicants to provide technical information that will enhance frequency coordination and help mitigate the possibility of interference, (2) add the 4.9 GHz band to the ULS microwave schedule for P-P and P-MP, and fixed receiver stations, (3) uncouple base and mobile stations from geographic licenses, and (4) maintain ULS as the comprehensive licensing database for the

²⁵ *Id.* at para. 48.

²⁶ Accordingly, APCO disagrees with the proposal that P-P and P-MP operations on individual 1-MHz bandwidth Channels 1-5 would remain secondary. *Id.* at para. 48.

4.9 GHz band.²⁷ ULS is the appropriate database for incumbent licensees and new applicants to provide technical information to aid frequency coordination. Once coordination requirements are in place and more detailed technical data is entered into ULS, APCO and other public safety coordinators may have additional recommendations about the data applicants should be required to file in ULS.

D. Deployment Reports and Construction Deadlines

Consistent with the shift away from a blanket geographic licensing approach, APCO agrees with the Commission’s proposal to require all current 4.9 GHz geographic licensees to place at least one fixed station in operation within 12 months of license grant and file a standard construction notification with the Commission.²⁸ Additionally, APCO supports the proposal to reduce the construction period for fixed P-P stations from 18 to 12 months.²⁹

E. Limit Communications by CII Entities to the Protection of Life, Safety, and Property on a Secondary, Preemptible Basis

The Commission seeks comment on whether to extend eligibility to CII entities on a co-primary status and whether eligibility should be conditioned on using the 4.9 GHz band to provide “public safety services” or “communications related to the protection of life, safety, and property, as opposed to general business purposes.”³⁰ APCO does not support providing CII with co-primary or notice-based access to the 4.9 GHz band as the NPSTC plan contemplates. Instead, the Commission should expand eligibility to CII with the conditions that 1) use is only for communications related to the protection of life, safety, and property, as opposed to general

²⁷ *Id.* at paras. 34-35.

²⁸ *Id.* at para. 63.

²⁹ *Id.*

³⁰ *Id.* at paras. 70-71.

business purposes, and 2) CII use is secondary and preemptible by public safety agencies. These conditions would be consistent with Commission precedent.³¹ With these conditions, opening the 4.9 GHz band to CII on a phased approach and limiting access to a portion of the band would be unnecessary. APCO also opposes expanding eligibility to all private internal systems and alarm companies.³² Unlike general business users, CII entities such as railroads and utilities may work alongside public safety agencies as part of an emergency response.³³ Application for use of this spectrum by CII entities should be subject to the same frequency coordination and licensing requirements as any other user in the space, consistent with APCO's recommendations for flexible use across the band, and coordinated by public safety coordinators.

In the nearly five years since the NPSTC plan was formulated, with a compromise between public safety and CII to expand eligibility for the band,³⁴ much has changed. Public safety's use, and anticipated use, of the 4.9 GHz band for meeting mission critical broadband communications needs has increased. Further, the spectrum environment has changed significantly, with new bands such as the Citizens Broadband Radio Service being made available for non-public safety users to meet their business needs. In this light, public safety agencies should be afforded the fullest opportunity, with the rule changes that APCO is requesting, to make robust use of the 4.9 GHz band.

F. The Commission Should Commit to Preserving the 4.9 GHz Band for Public Safety

³¹ See FNPRM n. 191 (citing In the Matter of State of Ohio and FirstEnergy Corp. Request for Waiver of Section 90.179 of the Commission's Rules, *Order*, DA 16-887 (Public Safety and Homeland Security Bur. rel. Aug. 4, 2016), In this case, an electric utility was authorized to use 700 MHz public safety spectrum for public safety purposes on a secondary preemptible basis.

³² FNPRM at para. 73.

³³ See *id.* at para. 73.

³⁴ See NPSTC Report at 10-11.

In adopting the changes outlined above, the Commission should commit to preserving the 4.9 GHz band for public safety use. After the rules change to increase flexibility and provide assurance of interference-free access to the band, time will be needed for these changes to take effect and permeate through the marketplace before public safety use could reasonably be expected to rise. Public safety agencies and technology vendors will be less likely to invest in 4.9 GHz solutions if they lack confidence that the band will be a long-term option for public safety.

The Commission seeks comment on redesignating the 4.9 GHz band, wholly or partially, to support commercial wireless use.³⁵ APCO strongly opposes redesignation of the band for non-public safety use, whether in whole or in part. Public safety is using the 4.9 GHz band for mission critical operations and will put the band to increased use provided the Commission adopts needed regulatory changes that APCO and others have been seeking for years. Further, as described above, public safety has no comparable alternative spectrum for bandwidth intensive, next generation mission critical communications. Preserving public safety use of this band will allow users to deploy emerging broadband technologies that cannot be deployed in other public safety bands.

The Commission should exhaust the evaluation of other bands for commercial use before giving further consideration to depriving public safety of spectrum. The 4.9 GHz band is a relatively small component of the entire spectrum in use or under consideration for commercial use.³⁶ Indeed, the 3.7 - 4.2 GHz band alone could yield ten times the amount of spectrum as the

³⁵ FNPRM at para. 85.

³⁶ As Commissioner O’Rielly has pointed out, alternative bands have the potential to free up 1,700 megahertz of spectrum. See Commissioner Michael O’Rielly, A Mid-Band Spectrum Win in the Making, FCC Blog, *available at* <https://www.fcc.gov/news-events/blog/2017/07/10/mid-band-spectrum-win-making>.

entirety of the 4.9 GHz band. Public safety should not be punished by having its dedicated spectrum reallocated when adoption has been hindered by the Commission's inaction to implement measures such as frequency coordination and other technical rule changes.

IV. Explore Options to Increase Use of the 4.9 GHz Band that Preserve Public Safety's Opportunity for Interference-Free Mission Critical Broadband

As suggested by the APCO 4.9 GHz Task Force, the Commission should consider further study of options to expand the user base for the band while preserving reliable access for public safety.³⁷

A. Explore the Potential for Viable Sharing with Non-Public Safety Users on a Secondary Basis

The Commission and APCO are in agreement "that a lack of available equipment for mobile applications has impeded widespread use of the band by public safety."³⁸ In addition to the rule changes proposed by APCO and others to increase technical and operational flexibility, sharing the band for commercial use has the potential to significantly increase equipment options.

The Commission seeks comment on the feasibility of a two-tiered sharing approach, in which Tier 1 would consist of primary licensees in the band, while Tier 2 would allow non-public safety users to access the band on a secondary basis, with safeguards to ensure priority and interference protection for Tier 1 operations.³⁹ APCO is not opposed to a sharing approach so long as public safety users retain continuous priority access to the band. Sharing has the potential to achieve the Commission's spectrum efficiency goals and create opportunities for

³⁷ Task Force Report at 15.

³⁸ FNPRM at para. 2.

³⁹ *Id.* at para. 82.

incumbents and new entrants alike in the 4.9 GHz band. Opening the band to more users can also encourage equipment manufacturers to innovate and develop an expanded device ecosystem for the band. However, any sharing techniques must be tested and proven in advance to be effective at protecting public safety's use of the band. As APCO has previously stated, public safety spectrum bands are not the appropriate arena to deploy new, untested spectrum sharing and frequency coordination methods.⁴⁰

B. The Commission Should Not Expand Leasing Alternatives

The Commission seeks comment on whether the rules should expand the leasing alternatives available to public safety in the 4.9 GHz band.⁴¹ Specifically, the Commission asks if it should remove the current limitation and allow public safety licensees that have obtained exclusive spectrum rights in the band to lease spectrum capacity to CII or to commercial entities generally.⁴² APCO does not support expanding leasing alternatives in the band. Leasing could be overly complex with many variables and different types of entities involved. Additionally, it is not clear how expanded leasing agreements would be managed or monitored. Public safety's use of the 4.9 GHz band is unlike commercial licensee use of other bands. In some cases, the public safety agency investing in and using 4.9 GHz is not the license holder. More fundamentally, public safety uses spectrum to protect life and property. Public safety licensees are not suited, and should not be put in a position to weigh monetizing their spectrum in exchange for operational usefulness.

⁴⁰ Comments of APCO, GN Docket No. 17-183, at 3-4 (filed Oct. 2, 2017); Reply to Consolidated Opposition of Higher Ground LLC of APCO, File No. SES-LIC-20150616- 00357, at 4 (filed Mar. 16, 2017); Application for Review of APCO, File No. SES-LIC-20150616- 00357, at 2 (filed Feb. 17, 2017); Comments of APCO, ET Docket No. 13-49, at 2 (filed Jul. 7, 2016).

⁴¹ FNPRM at para. 75.

⁴² *Id.*

V. Conclusion

APCO respectfully requests that the Commission preserve the 4.9 GHz band for public safety, take immediate steps to increase investment in and use of the band, and explore additional options for the band to fulfill the original intent to “provide public safety users with access to state of the art technologies that will enhance their critical operations capabilities.”⁴³

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⁴³ 2nd R&O & FNPRM at para. 30.