

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

In the Matter of)	
)	
Technical and Operational Feasibility of Enabling)	PS Docket No. 06-229
Flexible Use of the 700 MHz Public Safety)	DA 10-1877
Narrowband Allocation and Guard Band for)	
Broadband Services)	

COMMENTS OF APCO

The Association of Public-Safety Communications Officials-International, Inc. (“APCO”) hereby submits the following comments in response to the Commission’s above-captioned *Public Notice*, released September 28, 2010, regarding potential use of 700 MHz narrowband public safety channels for broadband services.

Founded in 1935, APCO is the nation’s oldest and largest public safety communications organization. Most APCO members are state or local government employees who design, manage, and operate public safety communications systems for police, fire, emergency medical, forestry conservation, highway maintenance, disaster relief, and other public safety agencies. APCO is the largest FCC-certified coordinator for Public Safety Pool radio frequencies and appears regularly before the Commission on a wide range of issues regarding public safety communications.

Public Safety Agencies Need 700 MHz Narrowband Channels

The 700 MHz narrowband public safety channels have long been viewed as a primary source of critical spectrum capacity for improved interoperability and operability for state and

local government public safety radio systems.¹ The proximity of the band to 800 MHz makes it ideal for expanding overcrowded public safety land mobile radio systems and for new wide area, multi-jurisdictional system deployments that will greatly improve interoperability.² While much attention has been placed on public safety broadband in recent years, the reality is that narrowband voice channels continue to be the most important source of communications for on-the-ground public safety operations. Furthermore, existing interoperability plans across the nation depend upon the 700 MHz band for common narrowband channels using standardized, interoperable radio equipment. Inserting broadband in narrowband spectrum would break down the interoperability benefits that have long been a fundamental aspect of the 700 MHz public safety band.

Broadband will not replace the need for narrowband voice communications, in part because of the inability of current (or foreseeable) broadband standards to accommodate infrastructure-independent (*i.e.*, simplex) unit-to-unit or traditional dispatch style one-to-many communication. Infrastructure-independent unit-to-unit communication is critical for on-scene tactical communications, for communications when one or both radio users are out-of-range from their principal network, or where the network itself has been damaged or is otherwise unavailable to first responders on the ground. These capabilities are fundamental aspects of mission-critical voice communications for public safety agencies.

¹ See, *e.g.*, The Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, *First Report and Order*, FCC 98-191, WT Docket 96-86 (Sept. 29, 1998).

² The “green space” in the band has also been invaluable for states and other jurisdictions seeking channels for vehicular repeater operation, which, because of frequency separation requirements, have been more difficult to identify with the reconfiguration of the 800 MHz band.

The 700 MHz band was first allocated for public safety in 1997, pursuant to a Congressional mandate.³ However, public safety use of the spectrum was blocked in much of the nation until the end of the DTV transition in June 2009. During the intervening years, public safety agencies, regional committees, public safety organizations, equipment manufacturers and the FCC devoted enormous resources to developing plans, operating procedures, and standardized equipment for the narrowband portion of band. Every state received a state-wide license and many local governments sought and obtained licenses once their relevant regional plans had been approved. Many agencies deployed systems where TV station operations were not an issue, including several large state-wide deployments (*e.g.*, Virginia). Others are now well along in the planning, funding, and construction stages of major systems (*e.g.*, City of Houston). Now that the band is cleared of full power television stations, additional public safety agencies from across the nation are just beginning to plan 700 MHz deployments, either as expansions of current 800 MHz systems or as entirely new, interoperable radio systems.⁴

Therefore, APCO remains very concerned that the *Public Notice* could cause some public safety agencies to postpone critical steps in the development of new 700 MHz narrowband radio systems, fearing that the FCC might alter the rules “mid-stream” in a manner that would prevent 700 MHz narrowband deployment, or impose rules that effectively limit the useful life of narrowband equipment. The *Public Notice* includes some assurances that no immediate action is contemplated; but additional statements from the Commission are needed to allow public safety agencies to proceed with system development without the threat of premature changes to the band.

³ Reallocation of Television Channels 60-69, the 746-806 MHz Band, ET Docket 97-157, *Report and Order*, 12 FCC Rcd 22,953 (1997).

⁴ APCO anticipates that many such agencies will be filing separate comments in response to the *Public Notice*.

APCO has conducted an online survey to gather information regarding current and anticipated uses of 700 MHz narrowband channels. The full results of the study are attached. In summary, 89% of respondents are with agencies that have or plan some type of 700 MHz narrowband use. Not surprisingly, 80% believe that the current narrowband allocation is necessary.

Broadband Use of 700 MHz Narrowband Spectrum Would Block Channel Availability and Undermine Interoperability.

A major concern with allowing broadband use of the 700 MHz narrowband channels is that it could have a devastating impact on nationwide interoperability and operability in the band. A principal goal of the 700 MHz allocation is to address interoperability problems by creating nationwide interoperability channels and providing spectrum for wide-area, multi-jurisdictional radio systems. However, the “flexibility” suggested in the *Public Notice* could mean that a supposedly “national” interoperability plan for 700 MHz is in fact no more than a collection of local/regional plans that may or may not work where major emergencies occur. For example, if narrowband interoperability channels are devoted to broadband in an area in which a large scale disaster occurs, how will responders from other regions communicate when they arrive in the impacted area? And *vice versa*, will first responders in areas where the narrowband interoperability channels have been converted to broadband have the ability to interoperate when called upon to assist agencies in other areas? The Commission also asks these questions, but there are no readily apparent answers.

The use of narrowband spectrum for broadband in a particular community, state or region would effectively prevent use of most of the narrowband channels anywhere within a wide geographic area surrounding the broadband operations. Co-channel protection between

narrowband users can usually be managed by assigning alternating narrowband channels through regional planning and/or frequency coordination. If a particular narrowband channel assignment poses a co-channel interference problem to another narrowband assignment, a simple channel swap usually addresses the concern. However, a *single* broadband (5 MHz) channel would prevent use of 400 co-channel narrowband (12.5 kHz) channels across a wide area.⁵ In addition, guard bands would be necessary to protect against adjacent-channel and intermodulation interference, potentially “wasting” valuable spectrum. Therefore, the combination of broadband co-channel protection, and the need for a guard band to protect adjacent-channel blocks, would effectively prevent most narrowband operations within a wide geographic area near broadband deployments on the current narrowband channels.⁶

The Commission suggests that broadband use of the narrowband spectrum would be optional, but that leaves open the critical question of who decides. The 700 MHz narrowband channels are licensed to cities, counties, joint powers authorities, and states. What happens if one jurisdiction wants to use “its” narrowband channels for broadband, but others in the area remain on narrowband channels? Giving decision-making authority to the states might be perceived as a solution, but the reality is that most public safety operations (and communications) are conducted by local police, fire, and emergency medical agencies, not state governments. Some states may be equipped to manage this situation, but many others have little or no relevant experience.⁷ Even if decisions were made at the state level, there would still be

⁵ A 5 MHz broadband channel consists of 5000 kHz, which could otherwise be divided into 400 narrowband (12.5 kHz) channels.

⁶ APCO understands that equipment vendors and other parties will be submitting comments with more technical details regarding these interference problems.

⁷ *E.g.*, a few states have developed effective state-wide radio networks (usually in 800 MHz band) that are also used by many, if not most local public safety agencies in the state. However, there are also states that have failed in their

the problem of adjacent states choosing different approaches, especially where a state has numerous state borders (*e.g.*, if Tennessee chose broadband, it would impact narrowband channels in eight bordering states). The current 700 MHz regional planning committees should play an important role if flexibility is allowed, but the committees currently lack the legal authority, governance structure, and resources likely to be necessary to address the inevitable conflicts among jurisdictions attempting to choose between narrowband and broadband within the same portion of the spectrum. In short, solving the governance issues posed in the *Public Notice* may be just as daunting as the technical interoperability and interference issues.⁸

CONCLUSION

APCO acknowledges that the day may come when conversion of the 700 MHz narrowband channels to broadband is a desirable and viable approach. However, that will not occur unless and until broadband services are able to meet the mission-critical voice requirements of public safety, broadband networks are built-out to provide coverage and reliability that is comparable if not better than current public safety narrowband networks, and the transition from narrowband to broadband can be accomplished without creating new forms of interference, reducing channel availability, or limiting interoperability. While we understand the

efforts to gain the cooperation of local agencies to participate in state-wide radio networks, and other states that have never attempted such network development for a variety of legal, political, and economic reasons.

⁸ The Commission also seeks comment regarding the impact of broadband flexibility on the current December 31, 2016 deadline for 6.25 kHz operation in 700 MHz narrowband channels (which is unrelated to the 2013 deadline to narrowband systems operating in bands below 512 MHz). The 2016 date needs to be extended, regardless of any eventual broadband flexibility as suggested in the *Public Notice*. First, the date does not provide an adequate equipment replacement cycle for most licensees, as the band was not even available in most populated areas until the end of the DTV transition in June 2009. Licensees should be allowed a minimum 10 to 15 year equipment life-cycle before being forced to buy new radios with taxpayer dollars. Second, there are serious questions remaining regarding the likelihood of standardized 6.25 kHz equipment being widely available by 2016.

Commission's desire to initiate an inquiry into these issues, the answers, let alone the ability to make the conversion to broadband, are still many years away.

Respectfully submitted,

/s/

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