

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

In the Matter of)
)
A National Broadband Plan for Our Future) GN Docket No. 09-51
)

**COMMENTS OF THE
ASSOCIATION OF PUBLIC-SAFETY COMMUNICATIONS OFFICIALS-
INTERNATIONAL, INC. (APCO)**

The Association of Public-Safety Communications Officials-International, Inc. (“APCO”) hereby submits the following comments in response to the Commission’s above-captioned *Notice of Inquiry*, FCC 09-31 (released April 8, 2009), regarding the national broadband plan that the Commission is required to submit to Congress pursuant to the American Recovery and Reinvestment Act of 2009.

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 manage and operate communications systems for police, fire, emergency medical, forestry conservation, highway maintenance, disaster relief, and other public safety agencies. APCO appears regularly before the Commission on a wide variety of public safety communications issues, and has been a leading participant in the FCC’s proceedings regarding the 700 MHz band and the formation of a national public safety broadband network using a public/private partnership model.

These comments will focus on the portion of the *Notice of Inquiry* concerning “public safety and homeland security” (pages 26-29, ¶¶72-79).

Wireless broadband will unquestionably play a critical role in the future of public safety communications. First responders and other public safety personnel are, by definition, mobile and must be prepared to operate and to communicate in real time from virtually any location, at least within a particular jurisdictional area. The ability to “roam” into other jurisdictions, near and far, to provide multi-jurisdictional emergency responses is also increasingly important and creates the need for broadly interoperable radio communications.

Not surprisingly, public safety agencies were the first entities in the United States to deploy mobile radios, as early as 1921 in the Detroit Police Department. Twenty-first century communications technology is no less important for those who are tasked with the protection of life, health and property. Public safety personnel must have reliable, immediate, secure, and ubiquitous radio communication, and increasingly the “bandwidth” to transmit far more than just voice. Thus, APCO and others in public safety have been pushing hard to establish spectrum allocations, procedures, and funding mechanisms to deploy state-of-the-art broadband wireless networks that will meet public safety requirements.

One of the potential benefits of new broadband networks is the enhancement of interoperability across public safety agencies and jurisdictions. That can be accomplished in two respects. First, to the extent broadband is based on a common protocol (IP) and uses an established wireless standard (*e.g.*, LTE or WiMax), the broadband network will itself become a vehicle for interoperability, linking all of the disparate users of the network. As data (and perhaps voice) communications operations migrate to broadband, interoperability will already

be established on those networks.¹ However, for that to occur, the networks need to be widely available, covering all of the various public safety users likely to need to communicate.

Otherwise only the few agencies on the network will benefit from the shared communications environment.

A second potential interoperability benefit is that new broadband networks could provide an “overlay” linking together existing, otherwise incompatible systems. Indeed, some interoperability solutions today already depend at least to a degree on gateways and bridges that use IP and wireline broadband networks.

As the Commission recognizes in the *Notice of Inquiry*, the extent to which broadband networks benefit public safety will be a direct consequence of the reliability of those networks. Public safety users require very high levels of reliability to ensure that systems have minimal “downtime” and are resilient to disruption from natural or man-made events. Thus networks must have redundancy and physical diversity to ensure seamless operations in the event of outages or capacity limitations.

The Commission also asks about the potential public safety applications of broadband. While there is no doubt that broadband will become a vital tool for public safety, it is still difficult to determine exactly which applications will be most important and widely used.² In general, public safety is likely to have a substantial need for all types of video applications, both on a day-to-day basis and for major emergencies that require extensive command and control capability. Video will need to be real-time, with mobile (and probably airborne) capability over wide areas. High-speed, reliable access to specialized databases (for building diagrams,

¹ In contrast, many existing voice systems developed independently over decades on different frequency bands, using non-standard equipment.

² Early deployments, such as the District of Columbia, may provide some glimpse of potential public safety use of broadband.

criminal records, medical information and images, etc) will also be critical public safety personnel in the field. Communication will need to be two-way, with comparable speeds for upstream and downstream capability.

Voice, which is the most mission-critical form of communication, will likely remain on narrowband land mobile radio networks that have ubiquitous coverage, extremely high levels of reliability and redundancy, full functionality (including “talk around” and “one-to-many” dispatching), and are under the exclusive control of public safety. While voice is likely to be offered on broadband networks, its use will be primarily for non-critical and secondary command and control communications for the foreseeable future.

The *Notice of Inquiry* briefly explores the issue of shared broadband networks. The cost of deploying any broadband network is enormous, and beyond the capability of most individual public safety agencies. Thus public safety deployment is likely to occur through shared networks. Perhaps that will be under the auspices of regional authorities, counties, or even states that create consolidated broadband networks serving multiple agencies and jurisdictions. Similar shared public safety networks have been deployed in some areas for voice communications, especially in the 800 MHz band. The success of such networks depends upon close cooperation among users, effective governance, and substantial, sustained sources of funding.

However, even when shared among multiple agencies and jurisdictions, the cost of deploying and maintaining broadband networks may still be too high for dedicated public safety systems. Thus, APCO and many others have supported the FCC’s initiatives to facilitate a public/private partnership approach for public safety broadband communications. As discussed briefly below and in the extensive record in PS Docket 06-229, a carefully crafted partnership

approach is the best way to deploy public safety broadband capability to the widest possible number of agencies at an affordable cost.

Partnering with private enterprise to deploy shared broadband networks does not mean, however, that public safety can simply rely upon commercial grade networks. Existing commercial wireless broadband networks are used by some public safety agencies today, but only for non-mission critical communications and only because nothing else is available. Commercial networks generally lack sufficient coverage, reliability, and capacity to meet the needs of mission critical communications.

The Commission also seeks comment on the use of the existing public safety broadband allocation in 4.9 GHz. Deployment in that band has been slowed, partly due to the uncertainty surrounding the 700 MHz band, which would offer superior propagation characteristics. The 4.9 GHz band has very limited range, restricting it to temporary use within a small area impacted by an emergency or in designated “hot spots.” In contrast, wide area broadband mobile use will be possible in the 700 MHz band once deployed. Some have suggested that future public safety broadband capability will involve a combination of 700 MHz and 4.9 GHz operations.

Finally, the Commission seeks comment on the relationship between its national broadband plan and the 700 MHz D Block proceeding in which the Commission established rules to facilitate a national public safety broadband network through a public/private partnership model. APCO continues to support that basic approach as it will lead to wider deployment, lower costs, better interoperability, and greater efficiency than a more traditional licensing scheme in which public safety agencies must deploy on their own (or in relatively small, shared networks). Absent a national network approach, only those agencies with sufficient resources and expertise will be able to deploy broadband, and there is no assurance that systems will be

interoperable or be able to take advantage of “off-the-shelf” technologies and standards. Other public safety agencies will be left in the dark, or forced to rely upon less dependable commercial networks. While a national network is essential, it must also accommodate those public safety agencies that have the ability to deploy broadband systems on their own, within the context of the national license and with appropriate interoperability and roaming requirements.³

The existing record before the Commission more fully addresses the numerous challenges facing the public private partnership approach for the 700 MHz band. There is a delicate balance between designing and maintaining a network to meet public safety requirements while at the same time providing economic incentives for private participation. Critical issues including defining priority access for public safety, network operations control, and division of costs must also be addressed. Finally, a partnership takes two (at minimum), and finding the right mix of public safety needs and commercial benefits will be the key to building that partnership, regardless whether that occurs through an auction or other means.

Respectfully submitted,

/s/

Robert M. Gurss
Director, Legal & Government Affairs
APCO International
1426 Prince Street
Alexandria, VA 22314
(571) 312-4400, Ext. 7008

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³ Recent meetings hosted by APCO and by the Major Cities Chiefs Association have led to agreements in principle among leading organizations on many of these issues.