

**POLICE COMMISSIONER RAYMOND W. KELLY**  
**TESTIMONY ON SAFEGUARDING OUR FUTURE:**  
**BUILDING A NATIONWIDE NETWORK FOR FIRST RESPONDERS**  
**U.S. SENATE COMMITTEE ON COMMERCE, SCIENCE, & TRANSPORTATION**  
**WEDNESDAY, FEBRUARY 16, 2011**

Good morning, Chairman Rockefeller, Senator Hutchison, members of the Committee. Thank you for this opportunity to testify.

Let me begin by expressing my gratitude for this bipartisan effort on behalf of public safety. Thanks to the leadership of Senator Rockefeller, Congressman King, and members of Congress on both sides of the aisle, we are closer than ever to providing our nation's first responders with a tool they desperately need: a nationwide broadband network dedicated to public safety. It was extremely encouraging to see President Obama expressing his firm support for this initiative last week.

I come to Washington today as the head of a police department that will benefit enormously from this technology. I consider it essential to the future of our mission. I know this view is shared by law enforcement agencies and fire departments, large and small, urban and rural across this country.

That's because our existing communications systems are fast becoming obsolete. Like virtually all other public safety organizations, the New York City Police Department relies principally on the use of two-way voice radios to communicate with responding officers and direct them to a scene. However, this technology is extremely limited. We cannot use it to exchange electronic data. And although we have made progress on local radio interoperability, the lack of a common radio spectrum prevents us from establishing a truly seamless nationwide system for all first responders.

Today, a 16-year-old with a smart phone has a more advanced communications capability than a police officer or deputy carrying a radio. Given the technology that is available, and the complexity of the threat we face, that is unacceptable. It will only change if we succeed in building a nationwide broadband network to a mission-critical grade of service.

In New York City, this would enable the NYPD to fully leverage the powerful technology that we use in our Real Time Crime Center. This is a state-of-the art computer facility we opened at our headquarters in 2005. It is supported by a massive database containing billions of public and private records. We've made this database searchable with the latest software. Around the clock, crime center detectives take calls from investigators in the field, looking to follow up on various leads they've obtained: a partial license plate, a seemingly untraceable cell phone number, a nickname or even a tattoo. They conduct instant, on the spot searches, something that previously took days of calling, faxing between agencies, and combing through paper files.

We're also about to launch a facial recognition unit within the Real Time Crime Center. It will use digital technology to match video images of people at crime scenes to mug shots on file.

With a dedicated broadband network, we would be able to push this information out to tens of thousands of officers on patrol. For example, an officer using a handheld device operating on this network could receive detailed information before he or she arrives at a location. This would include who lives there; whether or not the police have been there before and why; and if any of the occupants has an outstanding warrant, an order of protection, or a firearms license.

Such a network could also provide officers with an immediate, digital snapshot of anyone they detain. It would give them the suspect's address, prior arrest history, and other critical details. The officer would be able to take electronic fingerprints at the scene and compare them instantaneously with those in local, state, and federal databases. This kind of situational awareness is vital to the safety of the officers and members of the public. And it represents the next generation of law enforcement communications.

But we can't get there without a safe, secure, and effective broadband network over which to deliver this information, one that is built and run to public safety specifications, and one that we can control. We know from past experience that we can't depend on systems run by the private sector. They are too susceptible to failure in a crisis. On September 11<sup>th</sup> and after the 2009 crash of a commercial jet in the Hudson River, cell phone networks were deluged and police and fire communications over them became virtually impossible.

That's a grave concern in light of the threat we face from terrorism. The New York City Police Department trains every day to prepare for large-scale disasters. But we need a network that will support a multi-agency response and all of the technology we use to keep the city safe.

To give you one example, as part of our response to the attempted car bombing in Times Square last May, we deployed a robot to inspect the vehicle. As is the case with all of our robots, it was controlled by its operator through a thin, fiber-optic cable. Our need to maneuver around fire hoses and other obstacles on the street increased the risk that the cable would be run over and severed. If that had happened, we would have lost control of the robot.

With an adequate broadband network in place, we wouldn't have to worry about that. We could control robots wirelessly, thereby removing these risks.

It would also make it easier and safer to conduct complex operations involving more than one robot – say if we found a secondary device at a bomb scene. With wireless, broadband technology, we wouldn't have to be concerned about managing multiple cables. We could also share the video feeds from our robots with the federal government and other law enforcement agencies in real time.

Right now, these capacities do not exist. But they will if we build this network.

Every public safety agency in the nation supports this effort. That is why I urge Congress in the strongest possible terms to allocate the D Block directly to public safety, and to ensure funding for this vital resource. We need adequate bandwidth, network control, and the higher standard of reliability and survivability that only a public safety network can provide. Together with our partners from across the country, the New York City Police Department looks forward to the day when we can share a broadband capability that delivers voice, video, and data on a dedicated wireless network. For the sake of the security of cities and towns throughout our nation, I sincerely hope we see that day soon.

Thank you again for this chance to testify. I would be pleased to answer any of your questions.



Statement of Governor Jack Markell

Before the Committee on Commerce, Science, and Transportation

United States Senate

“Safeguarding Our Future: Building a Nationwide network for First  
Responders”

February 16, 2011

Chairman Rockefeller, Ranking Member Hutchison and distinguished members of the committee, my name is Jack Markell, Governor of the state of Delaware and a member of the National Governors Association's (NGA) Executive Committee. I appreciate the opportunity to appear before you today to discuss the importance of a nationwide broadband network for our first responders.

For more than a year governors have called for the reallocation of D block spectrum to public safety to serve as the cornerstone of efforts to develop and deploy a nationwide, interoperable broadband system. It is with great pleasure that I testify today to lend governors' support for the solutions presented by S.28, the "*Public Safety Spectrum and Wireless Innovation Act*," introduced by Senator Rockefeller.

## **OVERVIEW**

As governor, I am responsible for the safety and security of our citizens and must ensure that our public safety agencies can respond to any and all emergencies that may arise. Whether the event is a terrorist attack, a hurricane, chemical spill or bridge collapse, Delaware's first responders must be able to communicate seamlessly with each other and with the public at a moment's notice.

To do so requires a communications network with sufficient capacity to allow firefighters, police officers and emergency medical personnel to share video, building plans, and the location of personnel and equipment in real time. In short, they must have access to the technology that today's teenagers have at their fingertips.

Almost ten years after the terrorist attacks of September 11<sup>th</sup> and despite a great deal of national attention to first responders' communications needs, we continue to lack a nationwide network that can provide these capabilities to first responders.

## **S.28, THE PUBLIC SAFETY SPECTRUM AND WIRELESS INNOVATION ACT**

The nation's governors believe the development of an interoperable broadband network for public safety is essential to enhancing the ability of first responders to save lives and protect property.

Development of such a system is dependent upon three things: first, access to sufficient and dedicated spectrum; second, a funding mechanism to construct, manage and maintain the network; and third, clear governance guidelines to ensure nationwide coverage and interoperability. Efforts to address one issue without solving or supporting a solution for the others will only hinder progress towards reliable and interoperable communications.

Since the attacks of September 11, 2001, Delaware has worked diligently to address interoperability by installing a statewide 800 MHz narrowband radio system that is used by all Public Safety Agencies within the State. In doing so, Delaware became one of the first states to operate a truly interoperable Public Safety communications system. Unfortunately, due to narrow bandwidth, this system does not have the capability to provide for the exchange of robust broadband data.

S.28, the “*Public Safety Spectrum and Wireless Innovation Act*”, would take advantage of the unique opportunity to dedicate sufficient contiguous broadband spectrum to first responder communications by reallocating the 700 MHz D block spectrum to public safety, establishing a funding source for construction and operation of the network and addressing key governance issues necessary to ensure nationwide interoperability.

### ***Spectrum Allocation***

The chance to allocate the 700 MHz D block spectrum to public safety represents an unparalleled opportunity to develop a robust, modern and reliable nationwide interoperable broadband network.

Past efforts to develop and maintain interoperable communications across the country have been hindered by the Federal Communications Commission’s (FCC) allocation of small sections of spectrum across different frequency bands for public safety use – none of which are large enough to consolidate communications into a single segment of spectrum. Since devices operating on different frequencies cannot talk to each other, public safety agencies have sometimes been forced to install two or more radios in each response vehicle to ensure neighboring agencies can communicate.

This solution is not only cumbersome but costly. With state and local budgets that support public safety under continuing strain for the foreseeable future, it is time to improve the efficiency and cost effectiveness of critical public services, including first responder communications.

Without access to the D block, however, state and local governments will again be forced to maintain multiple communications networks to ensure the brave men and women who protect the public and respond to emergencies can talk to each other.

On the other hand, by combining the D block with the existing 10 MHz of adjacent public safety spectrum, public safety communications could eventually be migrated from other spectrum bands to allow for more streamlined, efficient and cost-effective communications systems.

While the migration of voice systems to broadband should be explored for potential future consolidation, please note that this cannot happen overnight. The narrowband spectrum is currently used by state and local governments for existing or developing interoperable voice communications systems that cannot be migrated to broadband until the technology has been further developed.

As you know, current law requires the FCC to auction the 700 MHz D block. The FCC plans to auction the D block for commercial purposes and provide public safety with roaming and priority access on other 700 MHz broadband networks for a fee. This will simply not work.

As demonstrated repeatedly during recent disasters, excessive demand can clog commercial systems and prevent users from accessing the network. First responders

require more reliable access, especially during times of emergency. It is simply unacceptable for first responders to be forced to wait for access when lives are at stake.

In contrast, S. 28 is based on the core principle that public safety communications are simply too important to be placed in other hands. By adding the D block to the existing block of 10 MHz, and by providing funding mechanisms, Congress will ensure that public safety controls the design and construction of network facilities sufficient to meet their exacting standards of performance. No commercial operator builds to meet those same standards. This is not to say that commercial providers should not be involved. Public safety should explore the real potential of working constructively with the private sector to meet its needs.

### ***Funding***

Just as sufficient spectrum is critical to the success of the nationwide network, so too is a sufficient funding source to ensure that the network is constructed in a timely manner throughout the country and that these systems can then be managed, upgraded and maintained as necessary.

Regardless of whether it is built on 10 or 20 MHz of spectrum, construction of a nationwide network will be a costly endeavor. As states continue to face budget gaps after several years of unprecedented declines, federal funding to support network construction and maintenance will help ensure its timely development and nationwide deployment.

S. 28 would address these funding challenges through the establishment of grant programs for construction and maintenance. These grants would be fully funded through future auctions of spectrum and could provide billions of dollars in financial support for a critical national public safety asset.

In addition, much like real estate, the D block is a valuable asset. If reallocated to public safety, this additional spectrum could allow state and local government greater flexibility to innovate in the development and administration of the network. For example, commercial wireless operators will continue to spend billions of dollars deploying broadband facilities that mirror those that public safety will construct and operate. Constructive and innovative partnerships with commercial operators might achieve economies of scale and allow sharing of construction and operating costs to the benefit of both parties. By putting public safety in control of the spectrum, the playing field is leveled to enable such beneficial arrangements.

### ***Governance***

Finally, in addition to the spectrum and funding issues I mentioned, establishing clear governance guidelines for the network will be critical to ensuring nationwide coverage and interoperability.

S. 28 recognizes the importance of the coordinated development of the public safety network by requiring the FCC to establish technical and operational requirements and by authorizing states to oversee the issuance of requests for proposals related to the network.

While maintaining flexibility for local areas to begin network construction ahead of the state, the legislation would ensure that any advanced network deployments are coordinated throughout the state or region. This will facilitate interoperability and coordination between existing voice communications systems, such as land mobile radio, and the public safety broadband network. It will also help ensure that rural areas are included in the nationwide network in a timely manner.

## **CONCLUSION**

The development of an interoperable broadband network for public safety is essential for enhancing the ability of first responders to protect our citizens from harm and respond to requests for emergency assistance. The cornerstone of such a network is dedicated spectrum; specifically, the reallocation of the 700 MHz D block to public safety.

Governors greatly appreciate the support of this committee and the introduction of S. 28. We also appreciate the President's support and his commitment to reallocating the D Block to public safety.

By reallocating the D block to public safety, S.28, the "*Public Safety Spectrum and Wireless Innovation Act*", would ensure that the nation takes advantage of this one time opportunity to avoid the mistakes of the past and allocate appropriate contiguous spectrum to support the safety and security of our country.

On behalf of the National Governors Association, thank you for the opportunity to testify. I encourage this committee to work closely with governors as you consider the legislation and to report it favorably to the Senate as soon as possible.



# Safeguarding Our Future: Building a Nationwide Network for First Responders

Testimony of  
Chief Al H. Gillespie, EFO, CFO, MIFireE  
First Vice President

Presented to the

COMMITTEE ON COMMERCE, SCIENCE AND  
TRANSPORTATION

United States Senate  
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Good morning Chairman Rockefeller and Ranking Minority Member Hutchison. I am Al Gillespie, Chief of the North Las Vegas Fire Department and First Vice President of the International Association of Fire Chiefs (IAFC) on whose behalf I appear. The International Association of Fire Chiefs represents the leadership of over 1.2 million firefighters and emergency responders. IAFC members are the world's leading experts in firefighting, emergency medical services, terrorism response, hazardous materials spills, natural disasters, search and rescue, and public safety policy. Since 1873, the IAFC has provided a forum for its members to exchange ideas and uncover the latest products and services available to first responders.

My testimony today is in support of S. 28 (the Public Safety Spectrum and Wireless Innovation Act). A top priority for all public safety – law enforcement, fire and emergency medical services – is to build a nationwide, public safety, wireless, interoperable, broadband network. This urgent need is recognized in many studies such as the 9-11 Commission and Hurricane Katrina reports. Mr. Chairman, S. 28, the legislation you introduced, will allow public safety to realize its nationwide communications goal by providing both the spectrum and funding which is required. This bill also has the support of the Public Safety Alliance, an organization of nine national public safety organizations, including the IAFC, and with the support of a diverse range of entities from both the public and private sector. Indeed, our goal is supported by the seven national organizations representing state, county and local government, as well as many of the leading technology integrators, telecommunications carriers and equipment manufacturers.

We are very appreciative of the recently announced support from the Obama Administration. The President's Budget, announced earlier this week, contains provisions for allocation of the D Block to public safety and methods for funding. We look forward to working with the administration as well as Congress to make possible a nationwide public safety broadband network bringing public safety communications into the 21<sup>st</sup> Century to better serve America's citizens.

Over the past fifty years, America's domestic defenders have been allocated thin slices of spectrum in each new band as it became available. That is why, today, we have over 55,000 public safety agencies each operating their own mission critical radio system over six or more different bands. This makes our goal of interoperability both difficult and expensive. After numerous major events and other significant disasters, it is clear that a new model is necessary: a national architecture for public safety wireless communications. To achieve a nationwide, public safety, wireless, interoperable, broadband network, key elements need to be in place.

**The network must have sufficient capacity.** To achieve a nationwide public safety broadband network - connectivity coast to coast, border to border - 10 MHz of D Block spectrum, currently slated for FCC auction, must be added to the current 10 MHz of spectrum licensed to Public Safety in order to build out a 20 MHz network. The currently licensed public safety spectrum abuts the D Block and is perfect for public safety. Only with this particular spectrum configuration, and none other, can public safety be assured that it will have the ability to build the network it needs now and into the future. S.28 will accomplish this one-time opportunity to get it right.

**Public safety must control the network.** Local control of the network by public safety agencies is critical. Utilizing a single technology with sufficient spectrum will ensure nationwide interoperability and allow us to effectively manage day to day operations, as well as any major incident. We cannot have commercial providers deciding what is or is not an emergency and what is the priority. Public safety transmissions have to go through without delay. A “no service” signal is not an acceptable element of emergency operations. The lives of firefighters, the lives of medics, the lives of law enforcement officers depend on this. It is our responsibility.

Public safety expects to work with others and enter into public-private partnerships. We will work with state, county and local governmental agencies, federal partners, utilities and others who respond to emergency incidents. But, public safety must have control over the operation of the network in real time. It cannot rely on commercial operators to provide its critical governance needs. Network control will give public safety assurance that it will have full, pre-emptive priority over its spectrum on a when-needed basis.

**The network must be mission critical at the outset.** In the beginning, this system will handle only data and video. At some future time – years away – we believe there will be a transition to mission critical voice. We all need to take a long term view – to start out with sufficient spectrum so that we will have the ability to migrate to mission critical voice. This will happen when the technology is developed, public safety has confidence in it, and its cost is affordable. Here are the key elements of “mission-critical.”

- The network must be hardened to public safety requirements. This means towers must be able to withstand the elements that might disable them. Towers in hurricane-prone areas and tornado alleys must be designed accordingly. Back up electrical power must be available 24/7. Redundancy is necessary.
- The public safety mission critical voice network must have the ability to broadcast and receive “one-to-one” and “one-to-many” and the ability to broadcast and receive without the network infrastructure being operative. This is called “talk around” mode – also known as simplex. This is a command and control imperative. You know well that we operate under extremely hazardous conditions. If the network, for any reason, cannot provide connectivity, then we need the capability to communicate without the network. This means communicating in the simplex mode. This is the essence of public safety communications.
- The network must have back up capabilities in the event of network loss and at a public safety standard. We envision satellite capability for the network to be available when a tower is disabled or other crippling malfunction. Satellites also can cover remote areas that do not have towers. Our mission is geography-oriented whereas commercial carriers are concerned with population.

**Funding is important for the build-out of a public safety broadband network.** State and local government budgets are challenged. The broadband network needed by public safety cannot be built without federal funding support. S. 28 recognizes this fact and offers a solution. And, this network, much like current 700 and 800 MHz Land Mobile Radio (LMR)

systems, must also be accessible to federal public safety users nationwide as well as “second responders,” such as utilities and highway agencies. Both a Construction Fund and a Maintenance and Operation Fund will be created and authorized to a maximum of \$11 billion for both funds. These funds will provide matching grant programs at the U.S. Department of Commerce to build the network and at the FCC to operate and maintain the network. The bill will fund the Construction Fund by auctioning, at a minimum, 25 megahertz of contiguous spectrum at frequencies located between 1675 MHz and 1710 MHz.

It is important to recognize how this public safety broadband network will revolutionize the fire and emergency medical services. Examples of applications include: live video to provide instantaneous situational awareness for mass casualty incidents (e.g. Tucson shootings), major hazardous materials spills, and real time situational awareness to incident command as well as elected officials and other decision makers. In the area of emergency medical services we envision digital imaging, portable EKGs, portable ultrasounds, field blood work with a direct link to the hospital’s emergency department. This would put a virtual physician in the back of the ambulance with the Emergency Medical Technician to expedite the proper life saving treatment. This will be especially critical in rural areas where transit time to the hospital is longer. These types of applications for fire and EMS are only possible with broadband capability.

Mr. Chairman, the IAFC and public safety support S. 28. This bill provides public safety with what it needs to begin the task of building out a nationwide public safety broadband network. S.28 is the vehicle for finally securing this critical asset, and we look forward to continuing to work with you and your colleagues in the Senate to further refine this legislation in order to enact the best possible bill into law. The 10<sup>th</sup> anniversary of the tragic events of September 11, 2001 will be marked in about seven months. Thus, we urgently need to move forward on a plan to develop the envisioned public safety broadband communications network. We thank you for your personal attention and leadership on this issue and will continue to work with you and the committee to assure prompt passage. I am available to respond to any questions you may have.



**TESTIMONY OF JOSEPH L. HANNA**

**PRESIDENT, DIRECTIONS**

**SAFEGUARDING OUR FUTURE:**

**BUILDING A NATIONWIDE NETWORK FOR FIRST RESPONDERS**

**Before the**

**Committee on Commerce, Science and Transportation**

**UNITED STATES SENATE**

**FEBRUARY 16, 2011**

## **TESTIMONY OF JOSEPH L. HANNA**

### **PRESIDENT, DIRECTIONS**

#### **Introduction**

Good morning Chairman Rockefeller, Minority Leader Hutchison, and members of the Committee. My name is Joe Hanna and I currently serve as the President of Directions, a public safety focused wireless telecommunications consulting practice. Prior to starting this practice, I retired from the public safety communications and public policy arena after 30 years of service. Additionally, I had the privilege to serve on the Association of Public Safety Communications Officials – International, or APCO, International Board of Directors from 1996-2000 and served as President during the 1999-2000 period. Since starting my consulting practice, I have remained an active member of APCO, the National Emergency Numbering Association (NENA), and have actively participated in meetings of the National Public Safety Telecommunications Council (NPSTC), Federal Communications Commission (FCC) events related to public safety, and have had the privilege to speak at numerous national conferences on topics related to public safety wireless communications. I have served as a public safety advisor to the 800 MHz Transition Administrator and currently serve as a Senior Fellow for the Center for Digital Government. Thank you for inviting me to join this distinguished panel to address the need for a nationwide interoperable network for first responders.

## **Summary**

Everyone in this room agrees that our first responders should have the tools they need to serve the public, including access to state-of-the-art communications systems. We differ on the most effective path to get to that result. Congress provided public safety with 24 megahertz of spectrum in the 700 MHz band. If prudently utilized, this allocation can provide public safety entities with the capacity they require for day-to-day needs. Using that capacity in connection with commercial spectrum in the 700 MHz band, as proposed in the FCC's National Broadband Plan, will give public safety the bandwidth necessary for disaster situations. Equally as important, partnering with commercial entities will allow first responders to take advantage of the benefits of commercial networks and handsets that consumers have come to enjoy.

## **Public Safety Must Have a Nationwide Interoperable Network**

As I am sure that you will hear from all of the panelists, it is inexcusable that almost ten years following the tragic events of September 11<sup>th</sup> and the carnage inflicted upon the residents of the Gulf Coast following Hurricane Katrina, America's first responders still find themselves ill equipped to communicate to the degree they need and deserve.

My real estate agent can take a client to a home, take out her laptop computer and pull up photos of the interior of the house, tax records, surveys and plats, and a list of comparable values in the neighborhood. But a firefighter at a burning building cannot pull up a floor plan to aid in a search and rescue or identify known hazardous conditions inside the building. A pedophile in a park can sit on a bench with a smart phone, take photographs of vulnerable children, and then instantly send his pictures to other

pedophiles around the world. But a police officer who has responded to that park to investigate this suspicious person cannot upload or download a photograph or scanned fingerprint of that person to a local, state or national database to help determine if this subject is indeed a known threat to the community.

I believe that every member of this panel can agree on a common set of principles for a public safety broadband network that will best serve our Nation. First, America's first responders deserve and require the same communications capabilities used every day by our real estate agents and junior high school students. Second, these core communications capabilities should be centered around a dedicated, public safety grade broadband network. Third, America's first responders need for these communication capabilities to recognize no distinction between urban, suburban, and rural boundaries. In fact, rural America may have the greatest need for high-speed data. An accident victim in Brewster County, Texas or Webster County, West Virginia bleeds just as fast as an accident victim in New York City or Houston, Texas. The only difference is that the time it takes to respond to that victim and to transport him or her to the nearest medical facility may be measured in hours rather than minutes. The Deputy stopping a suspicious van on a dark highway in Hillsville, Virginia recognizes that his closest backup may be 20 to 30 minutes away. The volunteer fire fighter understands that fire burns as quickly in Mountain View, Arkansas as a house fire in Dallas, but the nearest resources will take considerably longer to respond.



## **Public Safety Users Need Funding and a Plan for the Efficient Use of the Existing Spectrum Allocation**

I believe that every member of this distinguished panel will also agree that, at a minimum, there are two fundamental elements for providing America's first responders with the wireless broadband tools that we need -- dedicated spectrum and funding. I assume that my fellow panelists will agree that the widespread financial crisis facing cities, counties, and states throughout the nation will not allow America to realize the nationwide implementation of a dedicated, public safety broadband network without a massive, unprecedented infusion of federal funds. At a time when we are seeing major cities laying off substantial numbers of police officers and as fire departments are not able to upgrade critical equipment with more reliable or efficient models, communications systems far too often fall victim to these fiscal realities. One need look no further than the 21 jurisdictions that have been granted waivers by the Federal Communications Commission for early deployment of public safety broadband networks. Only 7 of these 21 jurisdictions have initiated steps to actually deploy their network. The remaining 14 jurisdictions have not. The difference between the 7 who are actively attempting to deploy and the 14 who are not? Funding from the federal government in the form of a grant from the Broadband Technology Opportunity Program, or BTOP.

While I agree with the views of my fellow panelists on most issues, unlike them, I don't believe that first responders need be the licensees of all the spectrum they may need to use. Working through one of the most ambitious schedules imposed by the Obama Administration, the FCC was charged with development of a National

Broadband Plan. One key element of the National Broadband Plan was the proposal for the deployment of a nationwide, interoperable dedicated public safety wireless broadband network. The proposal was made possible through tens of thousands of person-hours of intensive research, interviews, and a thorough understanding of technical requirements needed to implement this network. While proposal is not perfect, I believe that the National Broadband Plan fundamentally “got it right.” In addition to the proposal’s recognition of the need for funding, the cornerstone of the proposal is a dedicated public safety network utilizing the 10 megahertz of spectrum allocated to public safety by Congress in 1997. Recognizing that a September 11 or Hurricane Katrina situation could tax the 10 megahertz allocation, the National Broadband Plan proposed to allow public safety to utilize the capacity of commercial wireless carriers on a priority basis. The fundamental assumption of the National Broadband Plan was that the 10 megahertz of public safety spectrum would be more than adequate for the day-to-day, routine needs of the national network. This basic assumption remains true today. The question is how to address spectrum needs when faced with infrequent, but critical events that require additional capacity.

This question is faced every day by every public safety entity in the nation. While designing and managing my communication center in Richardson, Texas, I had to evaluate our daily, annual, and average call volumes to determine the number of call takers, dispatchers, and support personnel. This is no different than my counterparts here at the table. While we all try to provide resources based on our heaviest need, no public safety entity can provide enough telephone trunks, radio channels, or personnel to handle the extreme cases such as September 11 and Hurricane Katrina. I could

have equipped my suburban call center with 500 trunk lines instead of 7, but I would not have 500 people to answer the overload of calls if faced with an event the magnitude of a September 11 or Hurricane Katrina. Even if I could produce 500 people to answer the phones, there would not be 500 first responders on the street to respond to the 500 calls being answered.

While I don't believe that the reallocation of the D Block as proposed by S.28 is the key to an effective first responder broadband network, I do strongly support another provision of the bill that will help public safety use the spectrum they are allocated more effectively. S.28 would provide for the flexible use of the 700 MHz public safety spectrum allocated for narrowband communications. While the overwhelming majority of public safety entities have voiced opposition to this concept, failure to provide this flexibility will result in critically needed spectrum to remain fallow in many parts of this nation. New York City representatives, for example, have made multiple public statements that they have no desire to deploy any new voice systems that utilize narrowband land mobile radio, or LMR, technology. If New York City's position remains unchanged, the 12 MHz of beachfront 700 MHz spectrum currently assigned to them for narrowband technology will lie fallow in one of the most spectrum-pressed jurisdictions in the nation. While coordination of narrowband and broadband spectrum is challenging, it can be accomplished and this flexible use can provide additional broadband capabilities within the current public safety allocation.

Public safety has multiple other spectrum resources; in particular, 50 megahertz of spectrum in the 4.9 GHz band is well suited for many emerging broadband applications. Public safety cannot allow this, or any spectrum to lie fallow or under-used

in an era in which a “spectrum crisis” has been identified by the Administration. While no one would argue that the 4.9 GHz spectrum suited for the backbone of a national public safety broadband network, it can certainly be used to put flesh on the skeleton.

### **LTE Technology Allows Public Safety Sharing of Commercial Networks**

The difference between current spectrum use and the paradigm envisioned in the National Broadband Plan is that there is a viable alternative for accessing spectrum needs in an overloaded broadband network. As you may be aware, the public safety community has embraced a technology known as Long Term Evolution, or LTE, as the technology of choice for the proposed national public safety broadband network. The FCC has, for justifiable cause, broken a longstanding tradition of technical neutrality and proposed codifying LTE as the communications protocol for the future public safety broadband network. While this choice will not only provide for the critical requirement of interoperability within the network, this same technology provides for the ability of the proposed public safety broadband to seamlessly and automatically tap the networks operated by commercial carriers on a priority basis. Those commercial networks will also be using LTE technology.

Public safety has correctly specified and demanded preemptive capabilities that will give it priority over all users in an emergency. An analysis of the current LTE standards shows that this capability exists today. Through a mutually agreeable partnership between the public safety broadband network and a commercial wireless operator, public safety can be guaranteed automatic, seamless, access to additional capacity on a priority basis-with priority including the functional equivalent to “ruthless preemption” in today’s circuit switched networks. From an operational, functional

perspective, this process also gives public safety control of this shared spectrum, a requirement that public safety has identified as critical. This element provides the cornerstone for the National Broadband Plan's notion that a commercial carrier operating in the 700 MHz D Block can bear the burden of building that portion of a network and reducing the building requirements of the public safety portion the network.

The fly in the ointment for the shared spectrum concept is the willingness of current or future wireless carriers to agree to such an arrangement. Some national carriers have made public statements that they have no desire or intent to enter into a spectrum sharing arrangement with public safety, as they do not wish to potentially degrade services to their subscriber base. Their position is unreasonable and contrary to the public interest. Commercial users in an LTE world will not be totally preempted, but just put at the rear of the network access line. Thus, the policy question is whether commercial carriers – who hold their FCC licenses to serve the public interest -- should be permitted to decline participation in a shared network. In an environment in which spectrum is a national resource, slower access to commercial applications is a relative small price for the needs of public safety.

#### **A Public – Private Partnership with the D Block Licensee will Provide First Responders with Significant Benefits**

The greatest flaw with Congressional reallocation of the D Block to public safety in lieu of the current law and the proposal in the National Broadband Plan, however, are the unintended consequence of creating an island technology – a technology that only first responders will use. With expenditures of billions of dollars over the past 20 years, the shortcomings of public safety reaching interoperability through traditional land

mobile communications is beyond debate. Quite simply, public safety land mobile communications has been balkanized into a number of technologies scattered over thousands of jurisdictions. With the limited market in which public safety operates, the technology has changed relatively little (in terms of basic functionality), but costs have soared. It is the norm for a single, portable LMR radio to cost \$5,000, with some models costing considerably more. Contrast that with the commercial wireless market over its 20 year life span, where prices for terminal products have decreased significantly, while the capabilities of these devices have developed exponentially. The difference? The scope of the marketplace.

Current estimates for the total number of first responders range from 2 to 3 million users, a fragmented market divided among thousands of independent purchasing units. Press reports released last week estimates that Verizon will sell 1 million iPhones during their first week of sales. Another report noted that Samsung delivered over 10 million units of one phone model in the last six months of 2010, plus 1 million tablet computers during the month of December.

Under the National Broadband Plan, the public safety broadband network would have access to the 700 MHz D Block, plus possible access to other 700 MHz band commercial networks at such time that technology allows. On the other hand, if the D Block is reallocated to public safety, it is less likely that public safety entities will have access to commercial networks. AT 700 MHZ, equipment is expected to operate within designated spectrum bands, known as band classes, but not necessary across band classes. The current public safety and D Block comprise the entire band class 14. Therefore, if public safety were reallocated the D Block, there would be no incentive for

any commercial operators using other band classes to include band class 14 into the handsets they order from manufacturers. With no commercial orders for use of band class 14, there is no incentive for baseband chip vendors to design band class 14 into their baseband chipsets. With no commercial economies of scale, public safety will again find itself held hostage by a limited number of providers, thus resulting in the current low demand, high cost marketplace.

Additionally, the network budget estimates calculated by the National Broadband Plan were based on a model in which the dedicated public safety network would be built in conjunction with commercial deployments of their LTE networks. Co-located sites, sharing of some key components, and simultaneous deployment will result in reduced costs. These simultaneous or shared build outs would also permit public safety to access commercial sites where they might have elected to forego infrastructure deployments. As noted in the current round of early deployment by the City of Los Angeles, the initial public safety network will be built with approximately 350 sites. In that same geographic area, one of the nation's four largest carriers currently has over 5,500 sites already in operation. Based on the reduced number of sites being built in the public safety network, those sites must work at higher power levels and will have greatly diminished cell-edge coverage and performance. The only viable path in this design to enhance coverage and performance is to add significantly more spectrum to the network. Commercial carriers address these same issues without additional spectrum by adding cell sites. Under the National Broadband Plan, public safety entities could take advantage of this more responsible strategy as well.

Budget figures in S.28 are already below the cost projections made in the National Broadband Plan's concept of a *shared* build out. If the paradigm shifts to one in which public safety builds a stand-alone network in the D Block, there will be additional costs of building a national broadband network. With a shortfall in federal funds, public safety will be faced with the difficult choice of determining either how to ask Congress for billions of additional dollars in funding or to choose where the network will be built and where it will not. Instead of building a bridge to nowhere, we are now faced with building half a bridge, then forcing the unnecessary expenditure of additional billions of dollars to complete the bridge or leaving a substantial portion of America's first responders without the broadband services they deserve.

### **The Critical Element of Governance Must Be Addressed**

While S 28 has addressed most of the key elements needed to make a nationwide, dedicated public network a reality, the proposed legislation misses one key element-that of the governance and administrative structure required for the deployment of this complex undertaking. The decades-long absence of a national strategy to manage land mobile communications within public safety has fostered the unacceptable lack of interoperability. While billions of local, state, and federal funds have been poured into legacy land mobile voice communication systems, those funds have generally been allocated and spent with no national strategy to ensure interoperability. As complex as interoperability within land mobile voice systems may be, it pales in comparison to the complexity of broadband networks. If we fail to address the issue of governance and administration of this proposed network at the outset of this effort, we



are guaranteed extended delays in implementation, massive needless costs, and failure to have services implemented nationwide in an acceptable timeframe.

Public safety is well suited to define its operational needs, but has relatively little sophistication in network architecture. It is also unreasonable to expect any project for which billions of dollars are allocated can be managed by a small group of well meaning associations. Given the fact that we have already watched 12 years pass from the time that the 700 MHz band was first allocated until it was made available to public safety, and, given the fact that we have been actively trying to take concrete steps to get broadband services in the hands of first responders for almost 6 years, any legislation proposed by this Congress should ensure the creation of a multi-disciplinary governance/management structure that can deliver this network to those that critically need it without having to wait another 6 or 12 years. If we fail to find an appropriate alternative to the practices of the past, we are doomed to repeat the failures of the past.

To emphasize the critical nature of the role of an effective governance and management structure, there are 21 waivers granted by the FCC, 7 of which are actively in the process of deploying LTE systems. While there has been discussion about creating a “network of networks” within these 7 jurisdictions, each of these waiver jurisdictions is effectively proceeding on its own – initiating procurements, negotiating and implementing interoperability plans, and certification and compliance testing protocols. Each jurisdiction will build and staff a network operating center to manage these complex centers. Without a governance structure that understands and controls issues such as these from the outset, the road to a nationwide interoperable broadband system is guaranteed to be bumpy and paved with expensive, redundant capabilities.

## **Conclusion**

I again commend Senator Rockefeller for his leadership in bringing awareness of this critical issue to the forefront. At the end of the day, my greatest fear is that this debate will linger far too long. In the six years since I helped introduce the concept of broadband to the public safety community, we have seen the commercial sector move through three generations of broadband technology. In the midst of high-minded policy debates and national policy discussions, it is easy to overlook the simple fact that broadband is not a political issue; it is not a “I win, you lose” contest, but instead, is a matter of life and death for our first responders on the street. We should ask ourselves why it took 12 years for public safety to gain access to the 700 MHz spectrum that it desperately needed and why it has been another 6 years since the debate over a dedicated broadband network has lingered with no results. The bottom line is that there are two fundamental approaches that can provide the same functional product to the police officer, fire fighter, or EMT on the street. In one model, public safety can control its own destiny as it has in the narrowband world—a world that does not take advantage of new technology or a widely built network paradigm. The other option is to take advantage of the fundamental constructs of the National Broadband Plan that will allow the most prudent stewardship of both our limited spectrum resources and precious federal funds.

I appreciate your time and look forward to working with you on this critical issue.