

# ANDREW SEYBOLD

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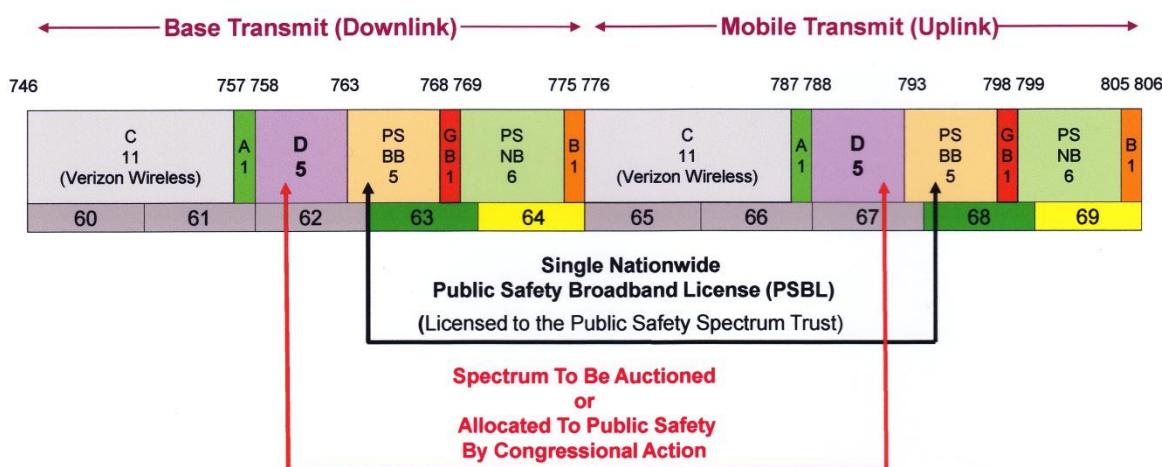
## The Allocation of 700-MHz Spectrum for Public Safety

Status as of Today:

The FCC has allocated 12 MHz of 700-MHz band spectrum for Public Safety mission-critical voice services AND 10 MHz of 700-MHz band spectrum to be used to build a nationwide interoperable wireless broadband network for Public Safety.

The major national Public Safety organizations, leading local, county, and state government organizations, and many major industry companies are united in their efforts to convince the 112th Congress to allocate an additional 10 MHz of spectrum, known as the D Block, to Public Safety so it will have the bandwidth necessary to deliver robust and reliable wireless broadband services nationwide.

### New Upper 700 MHz Band Plan - Adopted by FCC on July 31, 2007



#### 1. History

- a. Originally, the D Block, which consists of 10 MHz of spectrum adjacent to the Public Safety broadband allocation, was to have been auctioned in 2008 with the winner being required to work with Public Safety for a shared public/private broadband network. The auction of the D Block did not result in a winning bidder.
- b. The FCC, in its March 2010 National Broadband Report to Congress, recommended that the D Block be re-auctioned with no requirements for sharing with Public Safety.
- c. The FCC contended in that report and other white papers that 10 MHz of broadband spectrum, along with the ability to share, on a priority basis, with the D Block winner as well as Verizon and AT&T, which did win, spectrum during this auction, would provide Public Safety with all of the broadband spectrum it would need.

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- d. HOWEVER, they also stated that if it turned out that this spectrum was not enough for Public Safety's day-to-day operational requirements, it would allocate, sometime in the future, additional spectrum in another radio spectrum band.
  - e. The FCC is currently under a mandate from Congress to auction the D Block for commercial broadband service.
  - f. It will take action by both houses of Congress to re-allocate this spectrum to Public Safety.
  - g. In 2010, in the 111th Congress, two bills were introduced in the Senate: One by Senators McCain and Lieberman and one by Senator Rockefeller. Both of these bills directed the FCC to re-allocate the D Block spectrum to Public Safety and included funding for the construction and operation of the network from the proceeds of future public spectrum auctions. A Senate Commerce Committee hearing was held in September of 2010 on the Rockefeller bill but no further action was forthcoming and the bill died at the adjournment of the 111th Congress in December of 2010.
  - h. Also in 2010, a bill was introduced by Representative King in the House. This bill called for the re-allocation of the D Block to Public Safety but did not provide network funding.
2. The FCC has now allowed Public Safety organizations that filed for waivers to build out their own 700-MHz broadband networks (which will be tied together into the nationwide system). So far, 20 local, regional, and state organizations have stepped forward, been awarded the waivers and are in the process of designing their Public Safety broadband systems.
- a. This includes the San Francisco Bay Area and Los Angeles County in California.
  - b. Some of these systems have received broadband stimulus grants for the construction and operation of these networks. The San Francisco system received a \$50 million grant and is in process of building out its first 10 sites for a test system.
3. Public Safety has come together and unified under an organization called the Public Safety Alliance (PSA) to work together across police, sheriff, fire, and EMS organizations to convince congress that the D Block is needed by Public Safety and that priority access to commercial networks is not an acceptable solution. (See page 8 for more information on the PSA.)
- a. Public Safety is being strongly supported by AT&T Wireless, Verizon Wireless, Motorola, Harris, and other vendors.
  - b. However, many vendors are still sitting on the fence in this debate because once the decision is made by Congress they will have to do business with both the winning and losing sides.
4. Public Safety is being challenged by an organization now called "Connect Public Safety Now" led by T-Mobile and Sprint-Nextel and includes MetroPCS and the Rural Cellular Association. They contend that Public Safety does not need more than the 10 MHz of spectrum already allocated for broadband and, in fact, some

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of the narrowband voice spectrum at 700 MHz should be repurposed for broadband.

## 5. Today

- a. It is expected that two new bills, almost identical in wording, will be introduced in both the Senate and the House within the next few weeks.
- b. It is expected that these bills will call for the re-allocation of the D Block to Public Safety and provide \$10 billion or more in funding from future auction proceeds (in order to not further impact the national debt).
- c. The Public Safety Alliance will be holding meetings with members of Congress and their staff during the week of February 7, 2011.
- d. There are many supporters of Public Safety within both the House and the Senate. However, there are also some who do not support re-allocation of the D Block, and Public Safety is not yet sure of the amount of support it will receive from the newly elected Representatives and Senators.
- e. Therefore, it is important for Public Safety and citizens to contact their Representatives and Senators and ask them to support these new bills when they are introduced.
  - 1) One of the strongest weapons available to the Public Safety community is the Sheriffs because they, too, are elected officials.

## Public Safety Needs the D Block

### The Public Safety Position

1. Broadband capacity calculations made by the FCC and T-Mobile were based on commercial standards for system loading, NOT on the reality of Public Safety.
  - a. Most Public Safety emergencies are contained within a confined area that may be covered by only one or perhaps two cell sectors.
  - b. This means that 10 MHz of broadband will not be sufficient.
  - c. Research done by Motorola, Alcatel-Lucent, and myself (Andrew Seybold) show that 10 MHz of spectrum is not sufficient for Public Safety in major metro areas even for day-to-day operations.
    - 1) In a hostage situation with swat teams deployed, during a possible dirty bomb incident, and multiple-vehicle accidents, the demand for broadband services at the scene will consume more than 150% of the 10 MHz of available spectrum.
2. Priority access on commercial networks is an idea that in practice will not provide true priority with true pre-emption over existing customers.
  - a. Priority access ONLY works if the signaling channel is not overcrowded with requests for service as is often the case today when Public Safety shares existing commercial 3G networks for broadband services.
3. The FCC and T-Mobile capacity white papers do not focus on the amount of broadband capacity in the 10 MHz of already allocated spectrum. Rather, they conclude that Public Safety will have enough spectrum if the 700-MHz broadband system also makes use of the 4.9-MHz low-power, short-range spectrum AND if some of the narrowband spectrum is re-allocated for Public Safety broadband.
  - a. However, 4.9 GHz is already heavily used in many major metro areas for backhaul for point-to-point cameras, there is no frequency coordination required in this spectrum, and it would require those on the scene to set up a second broadband network. Another important factor is that 4.9 GHz does not penetrate buildings where Public Safety personnel are often working.
  - b. Also, 4.9 GHZ is short-range. Therefore, in order to transport the video and data carried over 4.9-GHz backhaul would have to be provided. The only backhaul available at the scene of an incident would be the 700-MHz broadband spectrum.
  - c. If Public Safety has to share the 700-MHz narrowband channels for broadband services.
    - 1) This will cause interference between broadband and narrowband systems, reducing the range and coverage of both.
    - 2) These voice channels, which include nationwide, regional, and state assignments, are a natural for providing mission-critical voice services
    - 3) Broadband will be able to handle certain types of voice (Voice over IP), but will not be able to provide voice communications off-network when units are on a scene but out of range of a cell tower.

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4. If the D Block was auctioned and did sell for \$3 billion, it would pay down exactly 16 hours of the interest on our national debt. If the D Block is re-allocated to Public Safety, it will be an investment in the future of Public Safety, which serves all of those who live and work in the United States.
  - a. The FCC's own report on broadband bandwidth requirements going forward indicates that demand for consumer and business broadband will more than double each year for at least the next five years.
    - 1) If it applies this same finding to Public Safety, it is evident that 10 MHz of broadband spectrum is not sufficient for Public Safety.
5. For more than 30 years, Public Safety has been short-changed when it comes to spectrum.
  - a. Today's Public Safety mission-critical voice systems are spread out over many different portions of the spectrum from 30 MHz to 800 MHz and the 700-MHz band is the only portion of spectrum that can provide Public Safety with both the broadband and narrowband voice spectrum it needs to provide interoperability with other agencies.
  - b. The 700-MHz D Block offers the only opportunity Public Safety has to end up with enough broadband spectrum to provide the level of service that will be required.
6. For additional reasons, please see Appendix A.
  - a. Public Safety Advocate articles by Andrew Seybold.
  - b. Filings with the FCC on this topic by Andrew Seybold.

## The Opposing Position

1. The FCC's Perspective (Public Safety and Homeland Security Branch)
  - a. Public Safety does not need more than 10 MHz of 700-MHz Broadband Spectrum.
    - 1) It can use priority access to roam on the D Block and the other commercial 700-MHz broadband networks during times of major emergencies.
    - 2) Public Safety will have enough data capacity with 10 MHz of spectrum for day-to-day operational requirements.
    - 3) FCC White Paper on Capacity "proves" 10 MHz of spectrum for Public Safety Broadband is sufficient.
    - 4) Congress has already mandated that the FCC auction the D Block for commercial broadband services.
2. From the Connect Public Safety Now Coalition
  - a. This coalition has prepared and filed a number of filings with the FCC showing that Public Safety can
    - 1) Make use of priority access on commercial networks;
    - 2) Make use of the 50 MHz of 4.9-GHz spectrum presently licensed to Public Safety for low-power, low-range broadband communications; and

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- 3) Public Safety can repurpose some of the 700-MHz narrowband spectrum for broadband usage.
- b. Some members of Congress
  - 1) We need the \$3 billion from the D Block and future spectrum auctions to help with the Federal Deficit.

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[www.psst.org](http://www.psst.org)

## **Public Safety Spectrum Trust**

The Public Safety Spectrum Trust Corporation (PSST) is a non-profit 501(c)(3) entity organized under the laws of the District of Columbia.

The PSST's mission is to provide an organizational structure through which decisions of national Public Safety leadership can guide the construction and operation of an interoperable nationwide Public Safety-grade wireless broadband network.

In November 2007, the FCC issued the PSST a ten-year nationwide Public Safety Broadband License (PSBL) for the 10 MHz of 700-MHz Public Safety broadband spectrum.

Chief Harlin McEwen serves as the elected Chairman of the PSST Board of Directors and is also serving as interim Chief Executive Officer (CEO) of the PSST.

## **PSST Organizations**

The board of directors of the PSST is comprised of representatives of the following organizations:

- American Association of State Highway and Transportation Officials (AASHTO)
- American Hospital Association (AHA)
- Association of Public-Safety Communications Officials-International (APCO)
- Forestry Conservation Communications Association (FCCA)
- International Association of Chiefs of Police (IACP)
- International Association of Fire Chiefs (IAFC)
- International City/County Management Association (ICMA)
- International Municipal Signal Association (IMSA)
- National Association of State Emergency Medical Services Officials (NASEMSO)
- National Association of State 9-1-1 Administrators (NASNA)
- National Emergency Management Association (NEMA)
- National Emergency Number Association (NENA)
- National Fraternal Order of Police (NFOP)
- National Governors Association (NGA)
- National Sheriffs' Association (NSA)

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[www.psafirst.org](http://www.psafirst.org)

## **Public Safety Alliance**

The Public Safety Alliance is a partnership with nine of the nation's leading Public Safety associations, including the Association of Public-Safety Communications Officials (APCO) International, the International Association of Chiefs of Police, the International Association of Fire Chiefs, the National Sheriffs' Association, the Major Cities Chiefs Association, the Major County Sheriffs' Association, the Metropolitan Fire Chiefs Association, the National Emergency Management Association, and the National Association of EMS Officials. The partnership is operated as a program of APCO International.

The purpose of the Public Safety Alliance is to ensure law enforcement, fire, and EMS agencies are able to use the most technologically advanced communications capability that meets the difficult, life-threatening challenges they face every day as they protect America.

The goal of the Public Safety Alliance is to raise awareness in Congress and the White House about what our nation's law enforcement, fire, and emergency medical services need to build out a nationwide, interoperable, 4G wireless communications network to protect America.

## **PSA Organizations**

1. [International Association of Chiefs of Police](#)
2. [International Association of Fire Chiefs](#)
3. [National Sheriffs' Association](#)
4. [Major Cities Chiefs Association](#)
5. [Metropolitan Fire Chiefs Association](#)
6. [Major County Sheriffs' Association](#)
7. [Association of Public-Safety Communications Officials, International](#)
8. [National Emergency Management Association](#)
9. [National Association of State Emergency Medical Service Officials](#)

## **PSA Public Safety Supporters**

- [International Association of Emergency Managers](#)  
[Police Executive Research Forum](#)  
[National Criminal Justice Association](#)  
[National Association of Police Organizations](#)  
[National Volunteer Fire Council](#)  
[National Troopers' Coalition](#)  
[National Organization of Black Law Enforcement Executives](#)  
[Association of Air Medical Services](#)

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[Advocates for Emergency Medical Services](#)

[Emergency Nurses Association](#)

[National Association of Emergency Medical Services Physicians](#)

[National Association of Emergency Medical Technicians](#)

[National Emergency Medical Services Management Association](#)

International Municipal Signal Association

American Probation and Parole Association

[InterAgency Board for Equipment Standardization and Interoperability](#)

## **State and Local Government Association Supporters**

National Governors Association

National Association of Counties

National League of Cities

[United States Conference of Mayors](#)

[Council of State Governments](#)

[International City/County Managers Association](#)

[National Conference of State Legislatures](#)

National Association of Regional Councils

The National Association of State Chief Information Officers

## **Other National Association Supporters**

[Communications Workers of America](#)

[American Public Works Association](#)

American Association of State Highway and Transportation Officials

Alarm Industry Communications Committee

The National Association of State Technology Directors

## **Public Safety Industry Supporters**

[Alcatel-Lucent](#)

AT&T

EADS

Harris

[Kenwood](#)

Motorola

Northrop Grumman

Verizon

Raytheon

Rivada

[Zetron](#)

[L.R. Kimball](#)