



Will Public Safety Promises Be Kept?

Building a Nationwide Public Safety Broadband Network

**International Wireless Communications Exposition
February 27, 2008**



Chief Harlin R. McEwen

Chairman

**Communications & Technology Committee
International Association of Chiefs of Police**

Communications Advisor

National Institute of Justice - CommTech Program

Chief of Police (Ret) City of Ithaca, NY
FBI Deputy Assistant Director (Ret) Washington, DC

Public Safety Communications Background

- Public Safety has always had to fight for spectrum to meet its mission critical communications needs
- Traditional land mobile voice communication continues to be, and will continue to be, essential to public safety
- Local, state, and federal public safety communication systems have traditionally been underfunded and therefore not always able take advantage of the latest and best technologies

A New Nationwide Public Safety Broadband Network Will Be A Giant Step Forward

- A single national broadband license for Public Safety

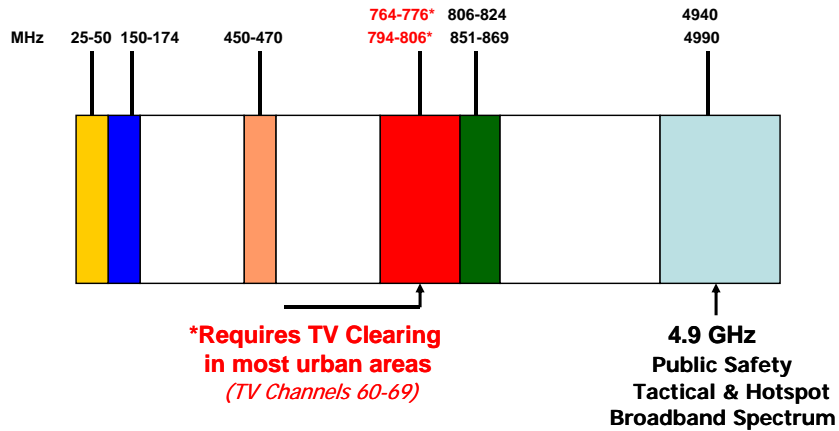
The Increasing Public Safety Mission Requires More Spectrum

STATE AND LOCAL PUBLIC SAFETY SPECTRUM ALLOCATIONS		COMMERCIAL SPECTRUM ALLOCATIONS	
<u>Allocation</u>	<u>MHz</u>	<u>Allocation</u>	<u>MHz</u>
VHF Low Band (25-50 MHz)	6.3	Cellular	50
VHF High Band (150-174 MHz)	3.6	Broadband PCS	120
UHF Low Band (450-470 MHz)	3.7	AWS	90
800 MHz Band (806-821/851-866 MHz)	3.5	Broadband Radio Services	190
800 MHz Band (821-824/866-869 MHz)	6.0	Lower 700	48
700 MHz Band (764-776/794-806 MHz)	24.0*	Upper 700	30
TOTAL PUBLIC SAFETY.....	47.1**	TOTAL COMMERCIAL.....	528

* Not available to public safety in many areas of the U.S. until TV broadcasters are required to move out of the spectrum in February 2009

** Public Safety also has 50 MHz of spectrum at 4.9 GHz but this is only practical for local area networks and hotspots – not for wide area or mobile networks

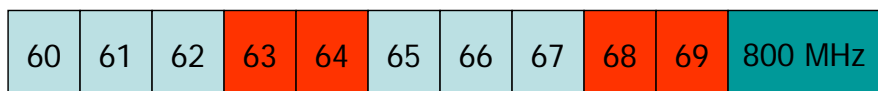
Public Safety Land Mobile Radio Spectrum Bands



A Critical Step Forward

On February 8, 2006, the President signed the Deficit Reduction Act of 2005. That act requires TV Broadcasters to vacate these channels no later than **February 17, 2009**.

700 MHz (TV Channels 60-69)



Public Safety-TV Channels 63,64,68,69

- The law required 700 MHz Spectrum be auctioned by January 2008. The proceeds from the estimated \$10 billion raised from the auction was allocated by Congress for various purposes

Purpose	Amount
Treasury general fund (deficit reduction)	\$ 7,363,000,000
PS Interoperability Communications	\$ 1,000,000,000
Digital to Analog Converter Box program	\$ 1,500,000,000
NYC 9/11 Digital Transition	\$ 30,000,000
Low Power TV & Translator Digital-to-Analog Conversion	\$ 10,000,000
Low Power TV & Translator Upgrade Program	\$ 65,000,000
National Alert and Tsunami Warning Program	\$ 156,000,000
Enhance 911 Program	\$ 43,500,000
Essential Air Service Program	\$ 30,000,000
Grand Total	\$ 10,197,500,000

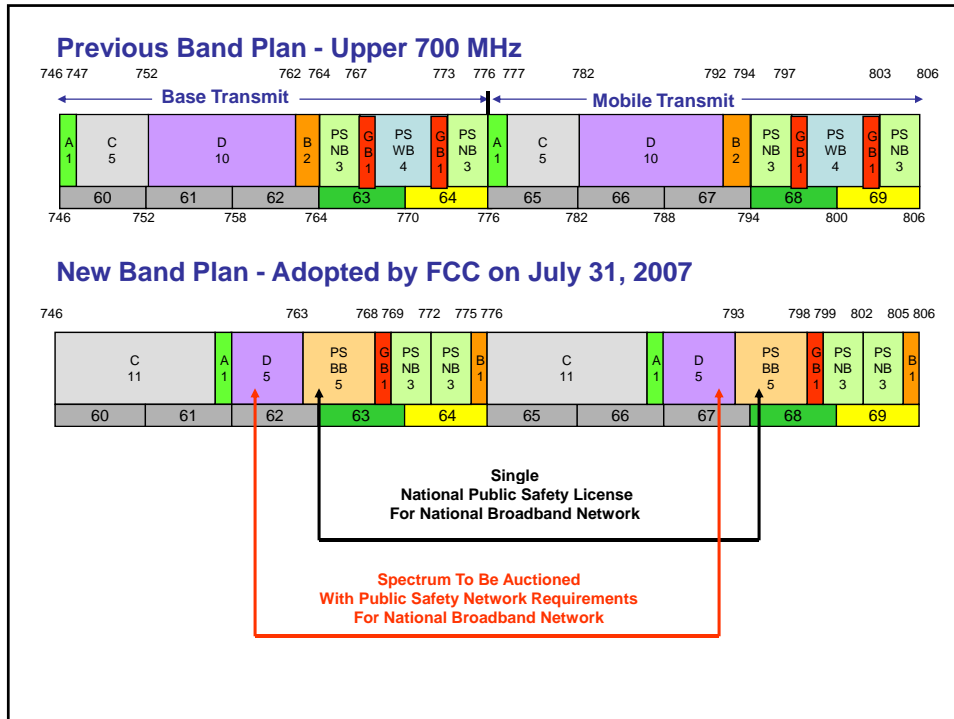
- During 2006 the public safety community rallied behind a proposal originally developed by Morgan O'Brien, a co-founder of Nextel Communications, who had left Nextel and formed a new company called Cyren Call Communications
- The proposal was to allocate to public safety 30 MHz of spectrum (in the upper 700 MHz Band) that was scheduled to be auctioned. It proposed that a public/private partnership be formed to build a new nationwide shared public safety commercial broadband network
- That proved to be unpopular with the existing commercial companies. The cellular industry lobbied hard against it and the proposal failed to get Congressional or FCC support.

- On December 20, 2006, the FCC issued the Ninth Notice of Proposed Rulemaking (NPRM) and said
“We believe that the time may have come for a significant departure from the typical public safety allocation model the Commission has used in the past.”
- On April 25, 2007, after receiving comments, the FCC issued a Further Notice of Proposed Rulemaking
 - ✓ It was a complex proceeding involving both the lower and the upper 700 MHz band to be auctioned as well as several proposed band plans
 - ✓ It included a proposal to create a single National Public Safety License, an idea that was carried forward from the Ninth NPRM

FCC Second Report & Order

Adopted July 31, 2007

- Enables a Public/Private Partnership
- Issues a single nationwide license to a Public Safety Broadband Licensee (PSBL)
- Gives public safety access to 10 MHz of contiguous commercial spectrum (D Block)
- Provides for a Network Sharing Agreement
- Combined spectrum assets are the basis for the shared network
- The D Block licensee must build the network to public safety specifications



Public/Private Partnership

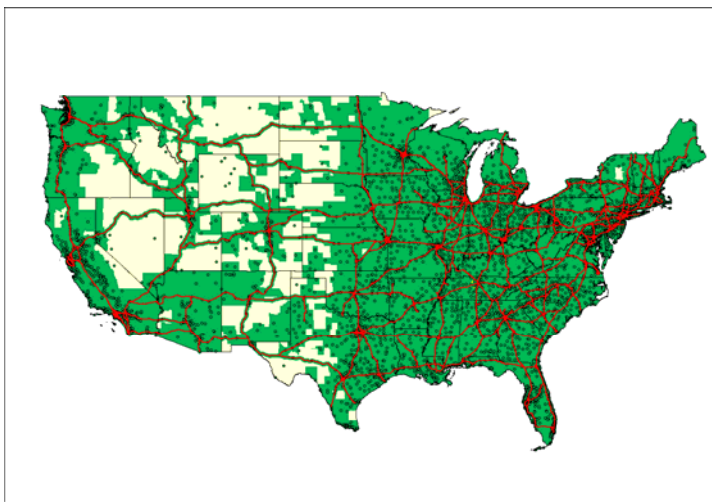
- Commercial investment to build out the infrastructure
- Significant cost efficiencies
- Commercial “off-the-shelf” technologies adapted for Public Safety
- Nationwide broadband network
- Public Safety access to an additional 10 MHz of broadband spectrum during emergencies creates ability to scale
- Priority Access for Public Safety

Specific Network Benchmarks

- Effective February 17, 2009, the D Block licensee must begin to construct a broadband network which meets coverage milestones
 - ✓ **75%** of population by the end of year four (2013)
 - ✓ **95%** of the population by the end of year seven (2016)
 - ✓ **99.3%** of the population by the end of year ten (2019)

- Requires coverage of major highways and interstates which traverse through under-populated areas be specifically addressed in the Network Sharing Agreement

Terrestrial Coverage* of Public Safety Network in 2019



- 99.3% Population
- 73.5% CONUS Land Mass
- 63% US Land Mass
- All counties with population > 5 per sq. mile
- Satellite coverage in "white spaces"

* Map coverage is approximate

Expected PSBL Network Requirements

Sufficiently robust to meet reliability and performance requirements of Public Safety

- Hardening of transmission facilities
 - ✓ Cell sites and antenna towers built to withstand harsh weather and disaster conditions such as flooding and hurricane force winds
- Backup power sufficient to maintain operations for extended period of time
 - ✓ Enhanced battery backup with deployable generators
 - ✓ In place emergency generators for primary sites
 - ✓ Comprehensive generator service plan

Network Requirement – Public Safety Control

- Sufficient capacity to meet requirements of Public Safety
 - ✓ Every day but also during large events, disasters and catastrophic situations
 - ✓ Automatic **Priority Access** with “**Ruthless Pre-emption**”
- Operational capabilities consistent with features typical of Public Safety systems
- PSBL has right of approval of all public safety network devices
- PSBL can purchase subscriber equipment from any manufacturer for use on the network

Network Requirements – Capabilities

- State-of-the-art Security and Encryption
- At least one “dual mode” handset capable of operating on either 700 MHz or satellite frequencies
- Mobile voice, video, and data capability that is seamlessly interoperable across agencies, jurisdictions, and geographic regions

Related Items

- No Public Safety organization will be required to use the 700 MHz Public Safety broadband network
- Participation is entirely voluntary

However,

- PSBL has the exclusive access to the Public Safety broadband spectrum
- The construction of local broadband networks is subject to the approval of the PSBL
- PSBL will be the only license holder for this spectrum



Public Safety Spectrum Trust

- On June 6, 2007, the Public Safety Spectrum Trust (PSST) was created in the District of Columbia as a not-for-profit Corporation
 - ✓ Formed by the Association of Public-Safety Communications Officials-International (APCO), the International Association of Chiefs of Police (IACP), and the International Association of Fire Chiefs (IAFC) and the International Municipal Signal Association (IMSA)
- On June 19, 2007, the PSST held its first meeting
 - ✓ Established bylaws and elected initial officers

The Public Safety Spectrum Trust (PSST) is now governed by a voting board of fifteen members - one representative from each of the following organizations:

1. AASHTO - American Association of State Highway Transportation Officials
2. AHA – American Hospital Association
3. APCO - Association of Public-Safety Communications Officials-International
4. FCCA - Forestry Conservation Communications Association
5. IACP - International Association of Chiefs of Police
6. IAFC - International Association of Fire Chiefs
7. ICMA - International City/County Managers Association
8. IMSA - International Municipal Signal Association
9. NASEMSO - National Assn of State Emergency Medical Services Officials
10. NASNA – National Assn of State 9-1-1 Administrators
11. NEMA – National Emergency Management Association
12. NENA - National Emergency Number Association
13. NFOP – National Fraternal Order of Police
14. NGA - National Governors Association
15. NSA - National Sheriffs' Association



- On October 5, 2007, the PSST Board of Directors unanimously selected Cyren Call Communications as its agent/advisor

This decision was made after the PSST advertised for proposals and conducted a review process of the proposals. The PSST received 10 responses. A PSST Committee narrowed those down to three very good finalists. The PSST Committee then conducted in depth oral interviews of the three finalists before the PSST Board made the final selection



- On October 10, 2007, the PSST submitted its application to the FCC requesting it be named the Public Safety Broadband Licensee (PSBL)
- On November 2, 2007, the newly constituted Board of Directors of the Public Safety Spectrum Trust met in Washington, DC.
The Board elected officers for a two year term:
Harlin McEwen, IACP, Chairman
Kevin McGinnis, NASEMSO, Vice-Chairman
Alan Caldwell, IAFC, Secretary-Treasurer
- On November 19, 2007, the FCC named the PSST as the nationwide Public Safety Broadband Licensee (PSBL)

The Path Ahead

- January 24, 2008 – The 700 MHz Auction #73 began
- Almost \$20 Billion Dollars bid so far
- Only one bid for the D Block spectrum
 - ✓ Does not meet the minimum bid requirement of \$1.33 Billion
- The PSST must wait for the outcome of Auction #73
- The FCC Report & Order contains language that allows the FCC to conduct an Auction #76 if there is no winning bid for the D Block
- The PSST is optimistic that, if necessary, the FCC will take follow up action that will be favorable to public safety in their endeavor to build a nationwide broadband network