



# **MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012**

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## **TITLE VI – PUBLIC SAFETY COMMUNICATIONS AND ELECTROMAGNETIC SPECTRUM AUCTIONS**

# **MAKING GOOD ON AN OVERDUE PROMISE TO OUR NATION'S FIRST RESPONDERS**

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- **Act implements key Administration priorities**
  - Public Law No. 112-96 (enacted February 22, 2012)
- **NTIA to establish the First Responder Network Authority (FirstNet)**
- **FirstNet to establish a nationwide public safety broadband network (PSBN) based on a single, national network architecture**
- **Reallocates 700 MHz D Block spectrum to public safety**
  - The Federal Communications Commission (FCC) to grant a single license to FirstNet for the use of both the 700 MHz D block and existing public safety broadband spectrum
- **Deficit-neutral**
  - Funded through proceeds of spectrum auctions through FY 2022
  - Network is self-sustained over long-term through fees

# TECHNICAL ADVISORY BOARD FOR FIRST RESPONDER INTEROPERABILITY



- Act establishes an Interoperability Board within the FCC
- FCC Chairman to appoint 14 voting members not later than 30 days after enactment
- NTIA Assistant Secretary appoints 1 non-voting member (*Dereck Orr of PSCR has been appointed*)
- Not later than 90 days after enactment, the Interoperability Board, in consultation with NTIA, NIST, and OEC, shall:
  - Develop minimum technical requirements to ensure a nationwide level of network interoperability
  - Submit to the FCC for review the recommended minimum technical requirements
- Not later than 30 days after the date on which the Interoperability Board submits recommendations to FCC, the FCC shall approve the recommendations with any revisions it deems necessary and transmit them to FirstNet



# FIRST RESPONDER NETWORK AUTHORITY

## “FirstNet”



- Act establishes FirstNet as an independent authority within NTIA
  - Exempt from Paperwork Reduction Act (PRA), Administrative Procedures Act (APA), and Regulatory Flexibility Act (RFA)
- Headed by a 15-Member Board
- Holds a single public safety 700 MHz wireless broadband license
- Takes all actions necessary to ensure the design, construction, deployment, and operations of the nationwide PSBN, in consultation with Federal, State, tribal, and local public safety entities, Director of NIST, the FCC, and public safety advisory committee
- Ensures deployment phases with substantial rural coverage milestones





- **FirstNet Board shall consist of:**
  - **Secretary of Homeland Security**
  - **Attorney General of United States**
  - **Director of Office of Management and Budget**
  - **12 individuals to be appointed by the Secretary of Commerce not later than 180 days after enactment.**
  - **The appointments shall have:**
    - **Not fewer than 3 individuals to represent collective interests of States, locals, tribes, and territories**
    - **Not fewer than 3 individuals who have served as public safety professionals**
  - **The appointments shall:**
    - **Seek to ensure geographical and regional representation**
    - **Seek to ensure rural and urban representation**



# FIRSTNET BOARD (cont.)

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- Each Board member shall have at least **1** of the following qualifications:
  - **Public safety expertise** – Knowledge and experience in Federal, State, local, and tribal public safety or emergency response
  - **Technical expertise** – Technical expertise and fluency regarding broadband communications, including public safety communications
  - **Network expertise** – Expertise in building, deploying, and operating commercial telecommunications networks
  - **Financial expertise** – Expertise in financing and funding telecommunications networks



# FIRSTNET

## PUBLIC SAFETY ADVISORY COMMITTEES

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- FirstNet shall establish a standing advisory committee for public safety
- FirstNet may also establish, as necessary, additional standing or ad hoc committees, panels, or councils



# STATE AND LOCAL CONSULTATION



- **FirstNet must consult with regional, State, tribal, and local jurisdictions regarding the distribution and expenditures of any amounts required to carry out its responsibilities, including:**
  - Construction or access to the core network and any radio access network build out;
  - Placement of towers;
  - Coverage areas of the network, whether at the regional, State, tribal, or local levels;
  - Adequacy of hardening, security, reliability, and resiliency requirements;
  - Assignment of priority to local users;
  - Assignment of priority and selection of entities seeking access to or use of the nationwide interoperable PSBN; and
  - Training needs of local users
- **FirstNet consultation must occur through the designated single officer or governmental body designated by each State**





# STATE AND LOCAL IMPLEMENTATION GRANT PROGRAM

- NTIA shall establish a grant program to States
- Program shall assist State, regional, tribal, and local jurisdictions to identify and plan the most effective way to utilize and integrate the infrastructure, equipment, and other architecture associated with the nationwide PSBN
- Not later than 6 months, and in consultation with FirstNet, NTIA must establish grant program requirements, including:
  - Defining eligible costs
  - Determining scope of eligible activities
  - Prioritizing grants for activities that ensure coverage in rural as well as urban areas
- Each State shall certify a single officer or governmental body to serve as coordinator of implementation of grant funds
  - Also serves as point for FirstNet consultation under §6206





# STATE NETWORK PROCESS

- FirstNet must complete the RFP process for the construction, operations, maintenance, and improvements of the nationwide PSBN
- Upon completion of the RFP process, FirstNet will notify the Governor of each State (or his/her designee) of:
  - Completion of the RFP process;
  - Details of the proposed plan for buildout of the nationwide, interoperable broadband network in the State; and
  - Funding levels for the State as determined by NTIA
- No later than 90 days after being notified by FirstNet, each Governor must choose whether his/her State will:
  - Participate in the deployment of the nationwide PSBN as proposed by FirstNet; or
  - Conduct its own deployment of a radio access network in the State



# STATE NETWORK STEPS



- If State decides to opt-out, the Governor must notify FirstNet, NTIA, and the FCC
- The State then has 180 days to develop and complete RFPs for the construction, maintenance, and operations of the radio access network (RAN) within the State
- The State shall submit an alternate plan for the construction, maintenance, and operations of the RAN within the State to the FCC and the plan must demonstrate:
  - That the State will be in compliance with the minimum technical interoperability requirements
  - Interoperability with the nationwide public safety broadband network
- FCC shall review and either approve or disapprove the plan





# STATE NETWORK PLANS AND POTENTIAL GRANT

- If the FCC approves the plan:
  - State may apply to NTIA for a grant to construct (not operate and maintain) the RAN within the State
  - State shall apply to NTIA to lease spectrum capacity from FirstNet
- In order to obtain a grant and lease, the State must demonstrate it has:
  - Technical capability to operate, and the funding to support, the State radio access network;
  - Ability to maintain ongoing interoperability with the nationwide PSBN;
  - Ability to complete the project within the specified comparable timelines specific to the State;
  - Cost-effectiveness of the State plan; and
  - Comparable security, coverage, and quality of service to that of the nationwide PSBN





# STATE NETWORK PLANS AND POTENTIAL GRANT

- **If the FCC disapproves the plan:**
  - The construction, maintenance, operations, and improvements of the network within the State shall proceed in accordance with the plan proposed by FirstNet
  - U.S. District Court for the District of Columbia has exclusive jurisdiction to review a decision of the FCC
- **Additional State Network Items:**
  - If a State chooses to build its own RAN, the State shall pay any user fees associated with the State use of elements of the PSBN
  - **Matching Share Requirement:** Section 6302 requires that the federal share of any activity carried out under that section using a grant may not exceed 80 percent of the eligible costs of carrying out that activity
  - Therefore, there will be a minimum 20 percent matching requirement for both the State and Local planning grants and the State construction grants





# FUNDING

## NTIA BORROWING AUTHORITY

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- The Act grants NTIA borrowing authority not to exceed \$2B to implement Subtitle B – Governance of Public Safety Spectrum



- The Act grants NTIA borrowing authority not to exceed \$135M to implement Section 6302 – State and Local Implementation
- In each case, NTIA borrows the initial funds from the general fund of the Treasury prior to the deposit of auction proceeds into the Public Safety Trust Fund (PSTF)



# FUNDING

## PUBLIC SAFETY TRUST FUND

- Amounts deposited in the PSTF are funds from the incentive auctions to be carried out by the FCC under 47 U.S.C. § 309(j)(8)(G) or the auction of spectrum pursuant to Section 6401
- Funds deposited in the PSTF are available on a cascading order of priority:
  - Repayment of amounts borrowed by NTIA - up to \$2B
  - Repayment of amounts borrowed by NTIA - up to \$135M
  - Buildout of PSBN in the amount of \$7B minus amount borrowed initially by NTIA (Section 6207 of the \$2B)
  - Public Safety Research and Development - \$100M
  - Deficit Reduction - \$20.4B
  - 911, E911, and NG911 - \$115M
  - Additional Public Safety Research - \$200M
  - Any additional deficit reduction
- *Note: PSTF may not be the first fund to receive auction proceeds*





# TIMELINE

2/22/12 - Enactment of Statute

3/23/12 - 30 days/FCC appoints Technical Advisory Board

5/22/12 - 90 days/Technical Advisory Board submits recommendations to FCC

6/21/12 - +30 days/FCC approves recommendations with any necessary revisions

8/20/12 - 180 days/Secretary of Commerce appoints FirstNet Board

8/22/12 - 6 months/NTIA establishes requirements for State and local planning grants

TBD - FirstNet forms Advisory Committee for Public Safety

TBD - FirstNet establishes itself with resources, develops RFIs, consults with designated agent for States, completes RFPs, and releases notice

TBD - States have 90 days after receipt of notice to opt-in or opt-out



**Anna M. Gomez, Deputy Assistant Secretary**  
**National Telecommunications and Information Administration**  
**U.S. Department of Commerce**

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# **QUESTIONS AND COMMENTS**



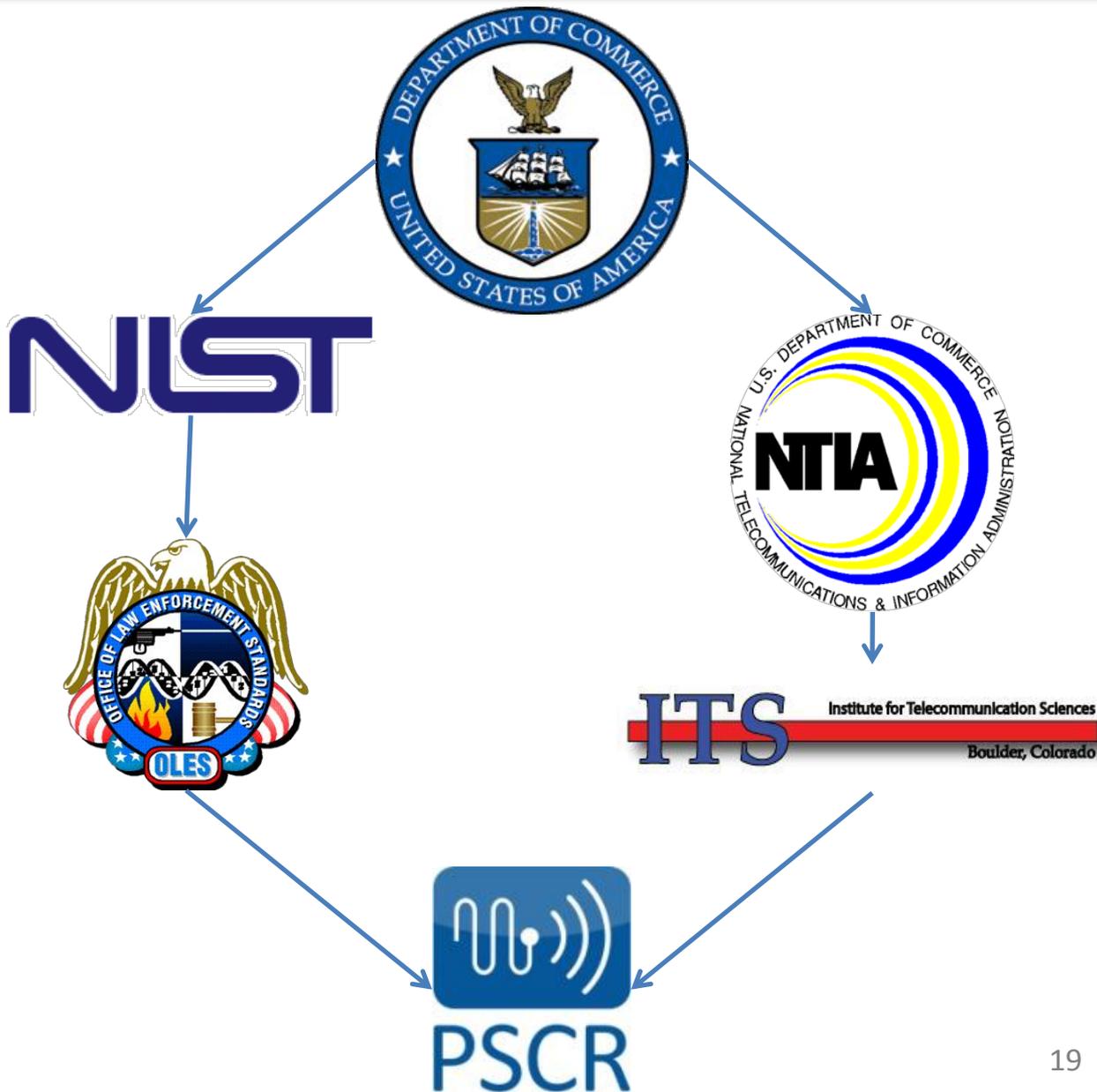
# Public Safety Communications Research (PSCR) Program

# Public Safety Communications Research Program

Located at the  
Department of Commerce  
Boulder Labs in Colorado

The PSCR Program is a joint  
effort between:

NIST's  
Office of Law  
Enforcement Standards  
(OLES)  
and  
NTIA's  
Institute for  
Telecommunication  
Sciences  
(ITS)



# PSCR Sponsors



## Homeland Security

Department of Homeland Security

Office for Interoperability and  
Compatibility



## COPS

Department of Justice

Office of Community Oriented  
Policing Services

## **Title VI, Section 6303 calls upon NIST to:**

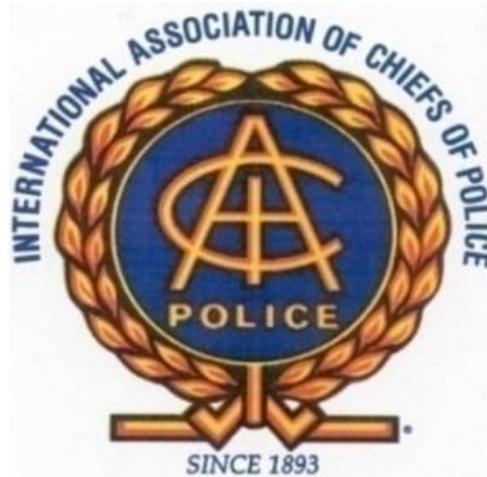
- Assist with the development of standards, technologies, and applications to advance wireless public safety communications.
- Document public safety's wireless communications technical requirements.
- Accelerate the development of the capability for communications between currently deployed public safety narrowband systems and the nationwide public safety broadband network.
- Establish a research plan and direct research that addresses the wireless communications needs of public safety entities beyond what can be provided by the current generation of broadband technology.

# Middle Class Tax Relief and Job Creation Act of 2012

- Accelerate the development of mission critical voice, including device-to-device “talkaround” capability over broadband networks, public safety prioritization, authentication capabilities, and standard application programming interfaces for the nationwide public safety broadband network, if necessary and practical.
- Accelerate the development of communications technology and equipment that can facilitate the eventual migration of public safety narrowband communications to the nationwide public safety broadband network
- Convene working groups of relevant government and commercial parties to achieve these requirements.

## **Title VI, Section 6206 calls upon NIST to:**

- Ensure the development of a list of certified devices and components meeting appropriate protocols and standards for public safety entities and commercial vendors to adhere to, if such entities or vendors seek to have access to, use of, or compatibility with the nationwide public safety broadband network.



**Chief Harlin R. McEwen**  
Chairman  
Communications & Technology Committee

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# Nationwide Public Safety Broadband Network

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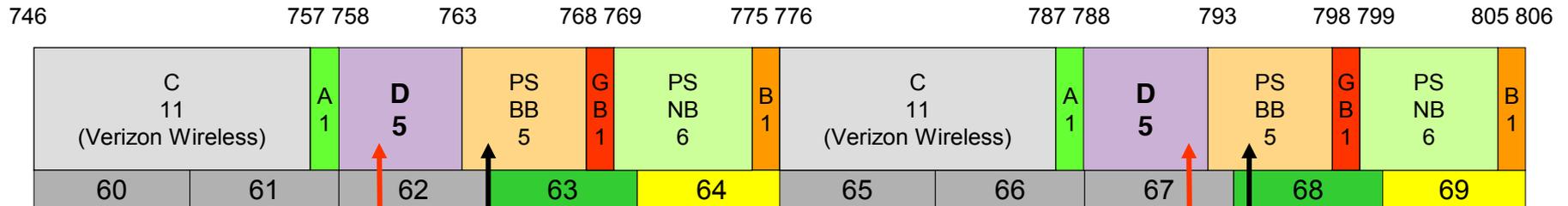
## HUGE INVESTMENT FOR PUBLIC SAFETY AND THE CITIZENS THEY SERVE

### EARLY TASKS

1. Appointment of Public Safety Interoperability Board  
*(NO LATER THAN MARCH 22, 2012)*
2. Appointment of First Responder Network Authority (FirstNet)  
*(NO LATER THAN AUGUST 22, 2012)*
3. Transition existing public safety spectrum (10 MHz) and D Block spectrum (10MHz) to FirstNet
4. Resolve Lease Issues with existing 21 Lease Holders

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

← Base Transmit (Downlink) → ← Mobile Transmit (Uplink) →



**Single Nationwide  
Public Safety Broadband License (PSBL)**  
(Licensed to the Public Safety Spectrum Trust)  
To Be Licensed to the First Responder Network Authority

**Spectrum Allocated To Public Safety  
By Congress (HR3630) on February 17, 2012**  
To Be Licensed to the First Responder Network Authority

# Waivers and Leases

May 12, 2010 – The FCC issued conditional waivers to 21 of the early Waiver Petitioners

**States (8)** – Alabama, Hawaii, Iowa, Mississippi, New Jersey, New Mexico, New York, Oregon

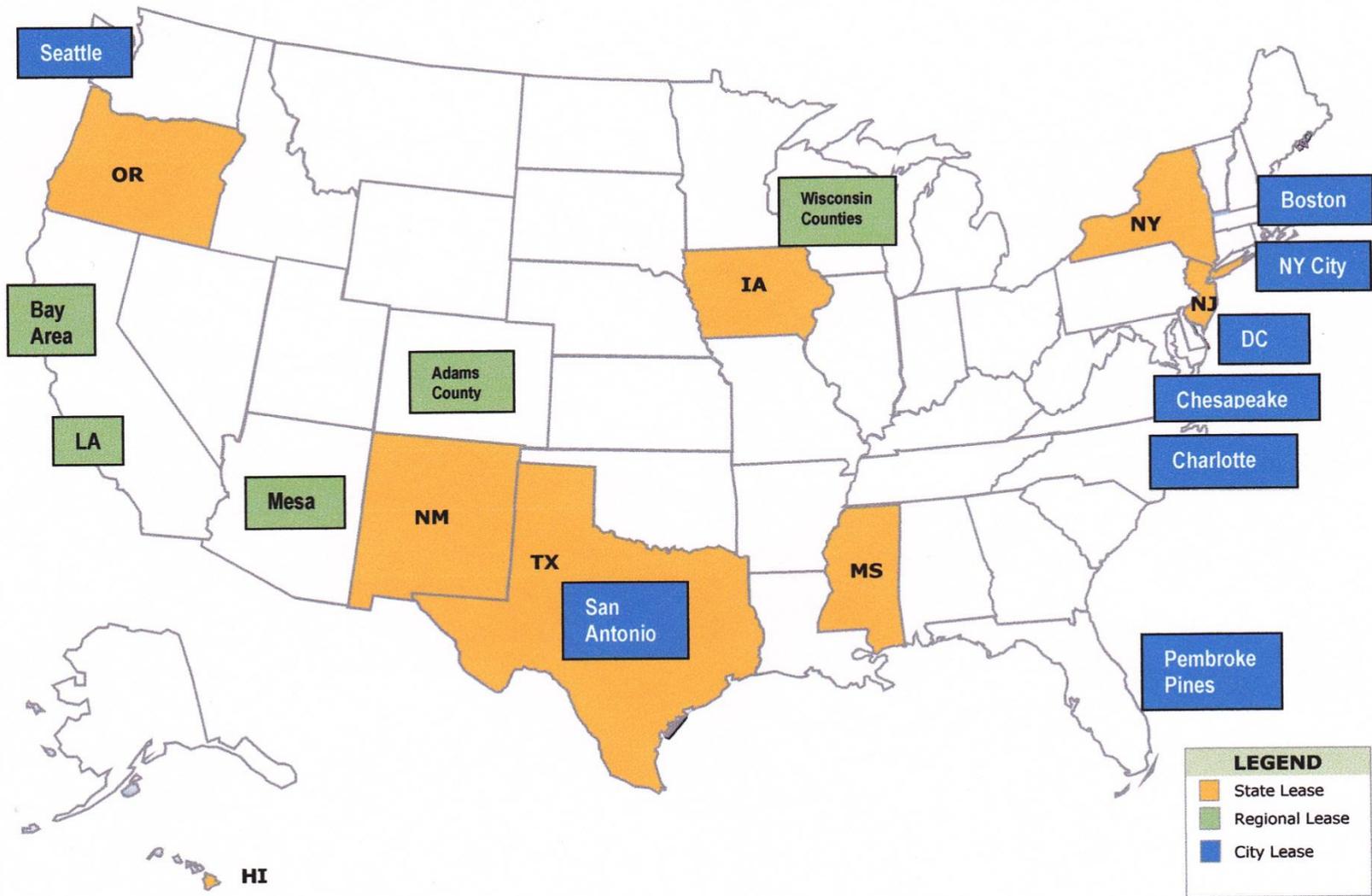
**Counties/Regions (5)** - Adams County-Denver Airport (CO), Bay Area (CA), Mesa-TOPAZ (AZ), San Antonio (TX), Wisconsin Counties (WI)

**Cities (8)** - Boston (MA), Charlotte (NC), Chesapeake (VA), Washington (DC), Los Angeles (CA), New York City (NY), Pembroke Pines (FL), Seattle (WA)

September 9, 2010 – The FCC approved 20 PSST Spectrum Leases for those entities listed above with the exception of Alabama, which was not ready to move forward.

May 12, 2011 – The FCC issued a conditional waiver to the State of Texas.

# Waiver Entities



<b>S-1</b> Hawaii (HI)	
<b>S-2</b> Iowa (IA)	
<b>S-3</b> Mississippi (MS)	\$70.0 million BTOP Grant
<b>S-4</b> New Jersey (NJ)	\$39.6 million BTOP Grant
<b>S-5</b> New Mexico (NM)	\$38.7 million BTOP Grant
<b>S-6</b> New York State (NY)	
<b>S-7</b> Oregon (OR)	
<b>S-8</b> Texas (TX)	
<b>R-1</b> Adams County-Denver Airport (CO)	\$12.1 million BTOP Grant
<b>R-2</b> Bay Area (CA)	\$50.0 million BTOP Grant (Motorola)
<b>R-3</b> Los Angeles (CA)	\$154.6 million BTOP Grant
<b>R-4</b> Mesa-TOPAZ (AZ)	
<b>R-5</b> Wisconsin Counties (WI)	
<b>C-1</b> Boston (MA)	
<b>C-2</b> Charlotte (NC)	\$16.7 million BTOP Grant
<b>C-3</b> Chesapeake (VA)	
<b>C-4</b> District of Columbia (DC)	
<b>C-5</b> New York City (NY)	
<b>C-6</b> Pembroke Pines (FL)	
<b>C-7</b> San Antonio (TX)	
<b>C-8</b> Seattle (WA)	

<b>S – States</b> .....	<b>8</b>
<b>R – Regions</b> .....	<b>5</b>
<b>C – Cities</b> .....	<b><u>8</u></b>
	<b>21</b>

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## What the T-Band Is and Who Is Impacted



## Spectrum Giveback in the Law

- ➔ The law states that Public Safety will have to give back the spectrum known as the T-Band
  - This spectrum is the 470-512 MHz spectrum that is shared with broadband TV
  - It has been licensed for secondary Public Safety use since 1978
  - 13 major cities and their surrounding areas were assigned 1, 2, or 3 TV channels in each city for Public Safety as well as business Land Mobile Radio use
- ➔ Users of this spectrum must be prepared to vacate it within 9 years and then will have 2 years to move to different spectrum
  - When this spectrum is auctioned, funding for the relocation will become available from the auction proceeds (estimated to be \$1 billion)

# What the T-Band Is

- ➔ The T-Band is the spectrum from 470 to 512 MHz
  - It is in the TV broadcast band
  - TV channels 14 through 20 are located in this band
  - Each TV channel uses 6 MHz of spectrum
  - Not all TV channels are assigned in each area of the U.S.
  - FCC granted waivers so Public Safety and business Land Mobile Radio systems could share in the use of previously unused TV channels in the major cities
    - This was done to help meet the demand for LMR radio channels in the most congested markets
- ➔ Examples
  - In Boston, TV channels 14 and 16 are being used for LMR
  - In New York City, TV channels 14, 15, and 16 are used for LMR
  - In Los Angeles, channels 14, 16, and 20 are used for LMR
  - Miami has only Channel 14 available for LMR

# Who Is Impacted by the Giveback

## ➔ 13 major metro areas

- Boston, Los Angeles, New York, Chicago, Miami, Dallas/Ft. Worth, Philadelphia, Detroit, San Francisco/Oakland, Houston, Washington DC/Maryland/Virginia, and Pittsburgh
- This includes the surrounding counties as well as the cities
  - City, county, and small police, fire, and EMS organizations in these areas are affected
- There are 808 Public Safety licenses issued for the T-Band with 34 applications pending

## ➔ T-Band is heavily used in these areas

## ➔ Most T-Band radios have already been narrowbanded

- APCO and the PSA are trying to get a stay for those that have not

## ➔ Many T-Band users are upgrading, replacing, or expanding their systems today

- City of Chicago is in process of a massive upgrade

## Why the Giveback?

- ➔ Congress and the FCC are looking for more spectrum to auction for commercial broadband services
  - These TV channels cannot be directly auctioned but
    - They can be filled by other TV stations freeing up other TV channels
      - LA: TV channel 46 could move to channel 14
      - TV channel 45 could move to channel 16
      - TV channel 44 could move to channel 20
    - This frees up 18 MHz (650-668 MHz) of prime broadband spectrum
- ➔ Some in Congress believe that the new Public Safety Broadband system will support
  - Mission-critical data (yes, it will)
  - Mission-critical video (yes, it will)
  - Mission-critical voice (not today and not for a long time)
    - There is misinformation regarding *IF* and how soon the Public Safety Broadband network will support on and off-network mission-critical voice

## Before you go into Panic Mode

- ➔ 9 years to plan and 2 years to move is a long time
- ➔ Spectrum inventories are being conducted to identify spectrum use in the U.S.
- ➔ There will be SOME type of mission-critical voice over the Public Safety Broadband network by then
  - I believe it will provide on-network mission-critical voice for dispatch and other on-network activities
  - We may need fewer narrowband voice channels if we can move dispatch functions to the broadband network
  - This leaves talk-around, simplex, or tactical off-network communications
    - This could all be accomplished on the 700 MHz narrowband spectrum *IF* the Public Safety Broadband system can handle on-network voice

## Where Do T-Band Users Relocate?

- ➔ Law does not mandate where these users have to relocate
  - Some believe it will be up to the FCC to “find” a place to relocate these users
  - Some believe that by the end of 9 years the Public Safety Broadband network will support all types of mission-critical voice required
    - (I am *NOT* among them!)
  - Possible relocation spectrum
    - After January 1, 2013, both the 150-170 MHz and 450-470 MHz band will have twice the number of channels available because of the narrowbanding mandate by Congress
      - Many cities and counties are already planning to expand their existing networks in these areas with the new channels
    - There is a pool of narrowband channels in 700 MHz next to the Public Safety Broadband spectrum
    - There are some channels in 800 MHz that might be available
    - There might be some new channels in 900 MHz (Nextel giveback channels)

# Recommendations

## ➔ NOTE

- *These are my own recommendations*
  - *Your communications personnel, consultant, or a consultant you hire can advise you on a case-by-case basis*

## ➔ If your T-Band system is older and needs replacement in the near term

- Determine whether any 700 MHz narrowband channels are available in your area
- If there are, build the new system on 700 MHz instead of replacing your existing T-Band equipment
- Build out and accept the new system PRIOR to moving your T-Band users to the new system

## ➔ Build out a new T-Band system

- It will provide you with good service for at least 9 years

## Recommendations (2)

➔ If there are no new 700 MHz channels available today then

- Wait for the narrowbanding deadline of January 1, 2013, and search for channels in the 150-170 or 450-470 band
- Look for available 800 MHz narrowband channels
- Wait until 2016 and apply for the new 700 MHz narrowband channels

➔ If your T-Band system has already been narrowbanded and/or the equipment is newer

- Review what other narrowband channel options you have today on 700, 150, 450, and 800 MHz
- Review them again after the narrowbanding deadlines have passed
- Consider building an overlay 700 MHz narrowband system over the the next 5-7 years
  - This will enhance voice interoperability and make the transition easier when it is required

## Recommendations (3)

- ➔ If you need to upgrade your system and none of the above meet your needs
  - Go ahead and move forward with the planned upgrade
    - Your system will be good for 9 to 11 years
    - There will be money to move by then
    - Spectrum map will have changed by then
    - Public Safety Broadband system should be able to handle your on-network voice requirements
    - The FCC *MAY* have to find new spectrum to move to
  - However
    - You should continue to monitor spectrum usage in your area on 150, 450, 700, and 800 MHz
    - You might want to consider combining your voice system into a regional interoperable voice system in the 700 MHz narrowband spectrum
    - Keep informed on all spectrum issues as they relate to Public Safety
    - Rely on APCO and its resources as you move ahead

# Conclusions

- ➔ Don't Panic!
- ➔ Check for other narrowband spectrum that might be available
  - 700 MHz narrowband spectrum is becoming the BEST place to move to because it provides for better interoperable voice communications
- ➔ If your system upgrade is in progress, don't stop!
- ➔ If you need a system-wide upgrade, look at all of the spectrum options in your area
  - Get some help from APCO and qualified consultants
- ➔ If you have not narrowbanded your T-Band system
  - Be careful. APCO and others are working to get a stay for narrowbanding but it was not in the law
- ➔ Above all, view this as an opportunity, not a problem!



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