# Improving Public Safety Communications in the 800 MHz Band

## (WT Docket No. 02-55)

**Catherine W. Seidel, Deputy Chief**
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**Federal Communications Commission**

# Background

## A History of Interference in the 800 MHz band

- Our Nation's first responders use the 800 MHz band for critical public safety communications. The 800 MHz band has become a linchpin in their ability to communicate effectively.

# Background

## A History of Interference in the 800 MHz band

- Since 1999, the Commission has received reports of interference to public safety communications systems caused by Commercial Mobile Radio Service (CMRS) providers operating systems in close proximity to mobile and portable radios.

- In 2000, representatives of the public safety and CMRS communities adopted “Best Practices,” a series of voluntary technical  measures to prevent or reduce interference.

# Background

## A Call for Commission Action

- Despite “Best Practices,” reports of interference to public safety systems have increased in recent years, demonstrating that voluntary measures are insufficient and emphasizing the need for Commission relief.

- Absent Commission action, growing interference will impede the reliability of critical public safety communications systems.

# The 800 MHz Solution

## Essential Objectives of the Commission's Plan

- Resolution of the problem of interference to public safety radio systems.
- Equitable treatment of all affected spectrum licensees with minimal disruption to both spectrum users and the public.
- Administration of the spectrum for the public good, exercising sound principles of spectrum management.
- The provision of additional 800 MHz spectrum that can be quickly accessed by public safety agencies and rapidly integrated into their existing systems.

# The 800 MHz Solution

## 800 MHz Report and Order

- The most effective solution to Public Safety interference is a plan comprised of both short-term and long-term components:
  - Short Term:
    In the short term, the Commission will implement interference abatement measures, including “Enhanced Best Practices.”
  - Long Term:
    In the long term, the Commission will reconfigure the 800 MHz band, thereby addressing the root cause of interference.

# THE 800 MHz INTERFERENCE SOLUTION, PART I

## INTERFERENCE ABATEMENT

*Short-term, much-needed relief from individual interference events*

# Interference Abatement

## Entitlement to Interference Protection

- Adoption of a new objective technical standard for determining whether a public safety or other non-cellular 800 MHz licensee is entitled to interference protection.

- “Unacceptable interference” is defined, for purposes of this proceeding, as interference that occurs in an area where the public safety or other 800 MHz system provides an adequate threshold signal level.

# Interference Abatement

## Rules and Procedures

- Prior Notification: On request, 800 MHz licensees are required to notify other 800 MHz licensees of changes to their systems which could change the interference environment.

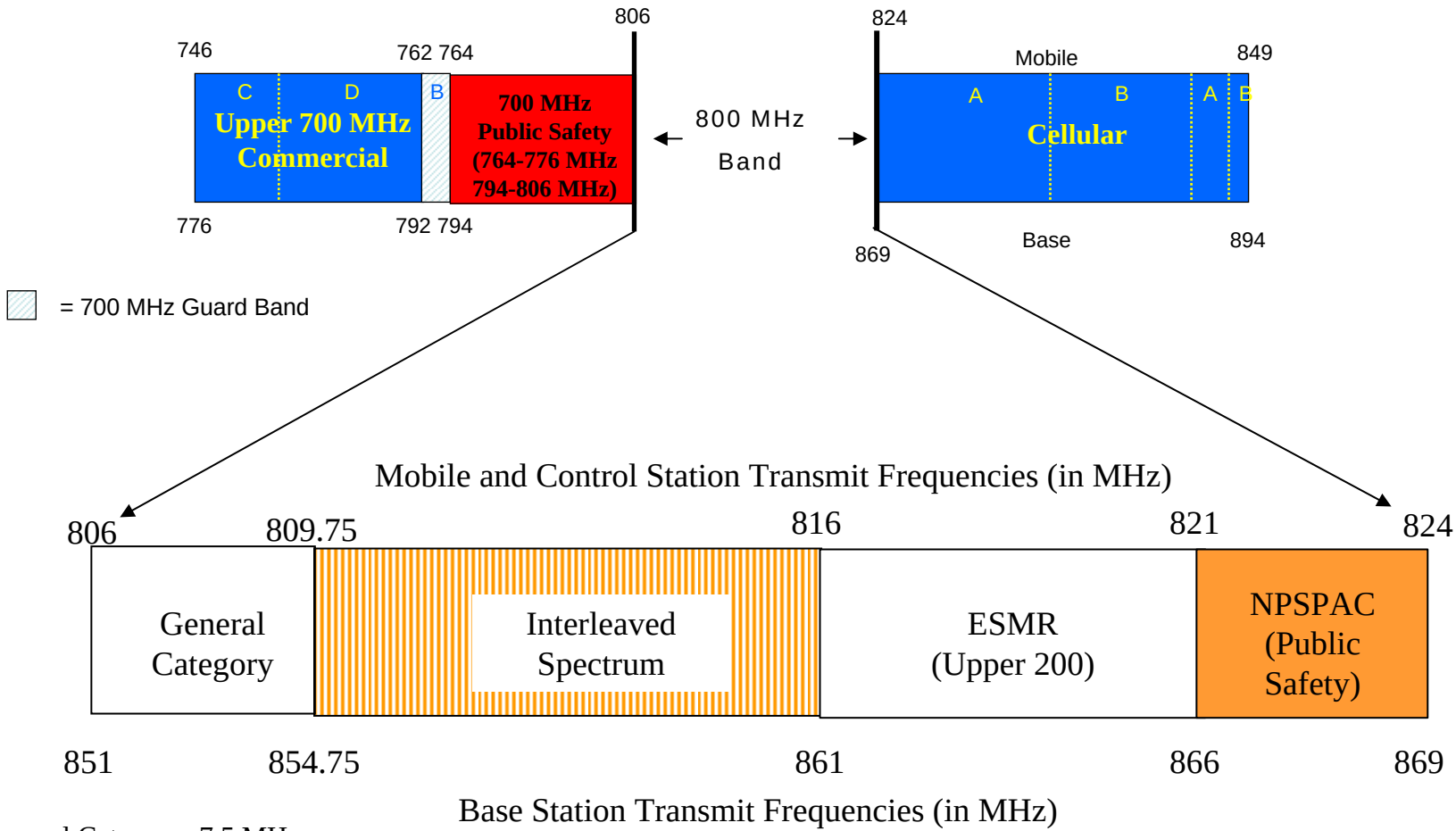
- Responsibility for Abating Interference: Any ESMR or cellular telephone licensee that causes, or contributes to, unacceptable interference to a non-cellular licensee is responsible for abating it promptly at its own expense.

- Interference Resolution Procedures: Licensees must comply with standardized procedures for reporting 800 MHz interference, identifying its source, and implementing a solution.

# THE 800 MHz INTERFERENCE SOLUTION, PART II

## BAND RECONFIGURATION

*Long-term, sustainable solution to the problem of 800 MHz interference*



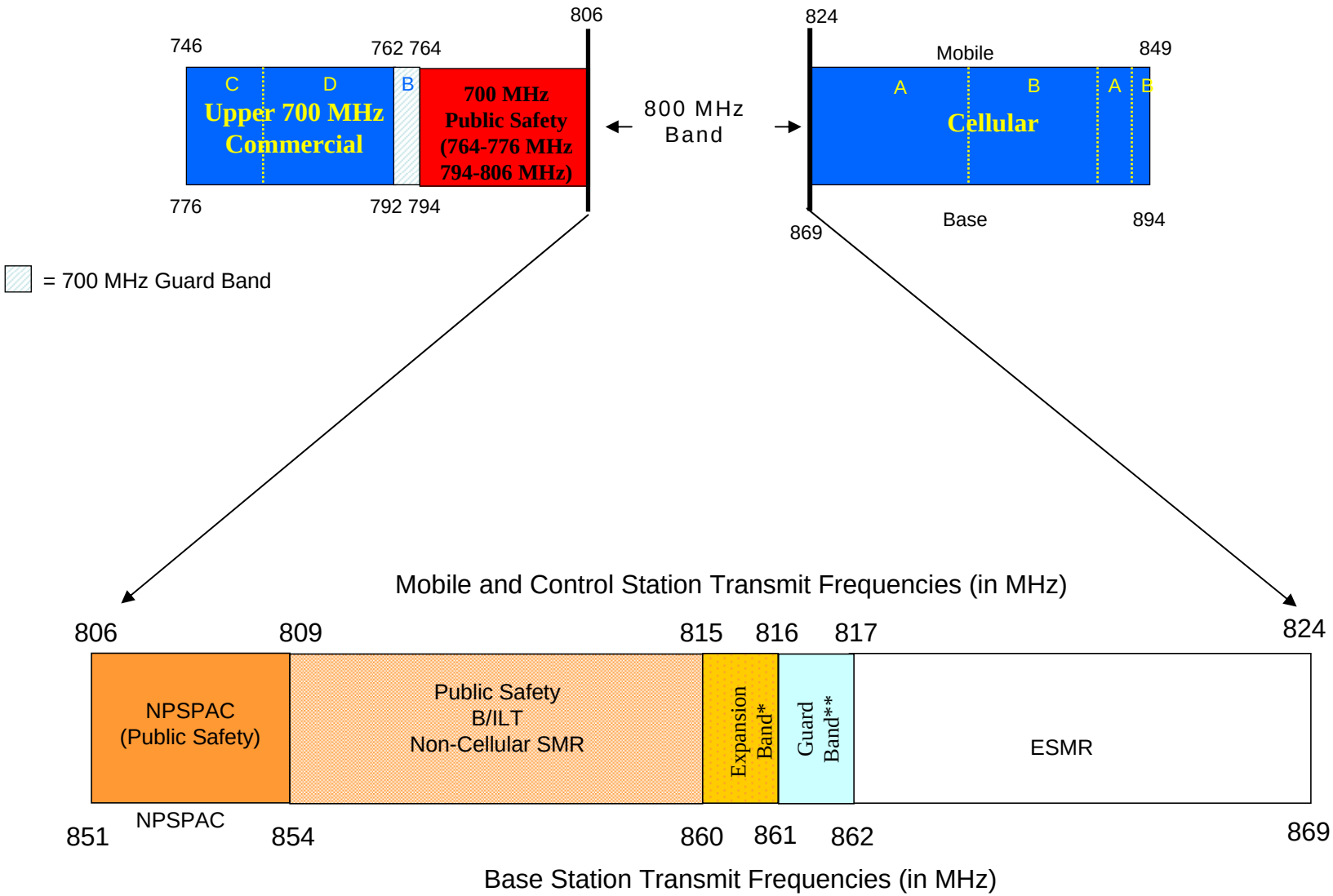

General Category -7.5 MHz
150 Channels
Licensed by EA Blocks of 25 channels (SMR)
Some Incumbent Operators Remain

ESMR/Upper 200 – 10 MHz
200 Channels
Licensed by EA
Non EA incumbents are currently
undergoing mandatory relocation

NPSPAC - 6 MHz
225 Channels @ 12.5 kHz spacing
5 Channels @ 25 kHz spacing
5 Mutual Aid Channels

Interleaved Spectrum -12.5 MHz
250 Channels
80 SMR Channels
(Licensed by EA, Some Incumbent Operators Remain)
70 Public Safety Channels
50 Business Channels
50 Industrial Land Transportation Channels

# PRE-RECONFIGURATION BAND PLAN




*No public safety system will be required to remain in or relocate to the Expansion Band; although they may do so if they choose.
**No public safety or CII licensee may be involuntarily relocated to occupy the Guard Band.

# POST-RECONFIGURATION BAND PLAN

# Band Reconfiguration

## Public Safety Benefits from Band Reconfiguration

- Band realignment will result in the availability of an average of 4.5 MHz of additional 800 MHz-band spectrum.
- Additional spectrum is sufficient to provide for 90 additional two-way channels for public safety and critical infrastructure.
- Relocating Public Safety to the lower portion of the 800 MHz band affords Public Safety the potential to realize interoperability with adjacent 700 MHz public safety operations.

# Band Reconfiguration

## Full Funding of Relocation Costs

- Nextel must pay for 800 MHz incumbent relocation costs and must secure a letter of credit in the amount of $2.5 billion to ensure adequate funding of 800 MHz reconfiguration.

- Nextel must provide 800 MHz relocated public safety licensees and other 800 MHz incumbents with comparable facilities.

- All channel changes necessary to implement band reconfiguration will be paid by Nextel.

# Band Reconfiguration

## True-Up Process

- To ensure that Nextel is treated equitably for its spectral and financial contributions, Nextel will obtain the right to operate on two five-MHz blocks at 1.9 GHz, subject to certain conditions.

- The Commission will credit Nextel for the value of the spectrum rights that Nextel has relinquished and its actual costs incurred in 800 MHz band reconfiguration and clearing the 1.9 GHz band.

- To the extent that these combined credits total less than the determined value of the 1.9 GHz spectrum rights, Nextel will make a payment to the United States Treasury at the conclusion of the relocation process equal to the difference.

# Band Reconfiguration

## Transition Administrator

- To ensure a smooth transition to the new 800 MHz band plan, the relocation process will be managed by an independent Transition Administrator.

- The independent TA will:

  - ✓ oversee the administrative and financial aspects of the band reconfiguration process
  - ✓ provide accountability
  - ✓ ensure that reconfiguration is achieved with minimal disruption to licensees, particularly public safety entities
  - ✓ authorize disbursement of funds for band reconfiguration based on requests for payment by affected parties
  - ✓ resolve relocation disputes.

- TA decisions will be subject to *de novo* review by the Commission.

# Band Reconfiguration

## Timeframe

- The Transition Administrator must be selected by October 10, 2004.
- Within 30 days of the Transition Administrator's selection, the TA will provide the Commission with a schedule detailing when band reconfiguration shall commence for each NPSPAC Region.
- Once the "rebanding clock" is started, band reconfiguration must be completed within 36 months.

# Band Reconfiguration

## Step-by-Step Relocation Process

- TA notifies a licensee of the need to relocate.
- Cost of relocation is estimated and submitted to the Transition Administrator or directly to Nextel (licensee will be paid for the cost of producing the estimate).
- Relocation funds, backed by the $2.5 billion Letter of Credit are disbursed to the entity contracted to reconfigure the licensee's system.
- Any disputes are referred to the Transition Administrator.
- Licensee begins operation on the new channel.

# Conclusion

## For More Information:

- Text of the 800 MHz Decision:
  http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-168A1.pdf
  (pdf format)
  http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-168A1.doc
  (Word format)

- FCC Wireless Telecommunications Bureau:
  http://wireless.fcc.gov/
  http://wireless.fcc.gov/publicsafety/
  http://wireless.fcc.gov/publicsafety/800MHz/bandinterference.html

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