

# Resolutions to Interference in the 800 MHz Band

Lawrence R. Krevor

Vice President – Spectrum

Sprint Nextel Corporation

The allocation of 800 MHz occurred in the 1970s; it was anticipated at that time that operators within this band would utilize essentially similar system design architectures

The cellular architectures (low-site, low-power) that were introduced in the 1980s and 1990s were fundamentally different from the architectures (high-site, high-power) used by public safety and private wireless licensees

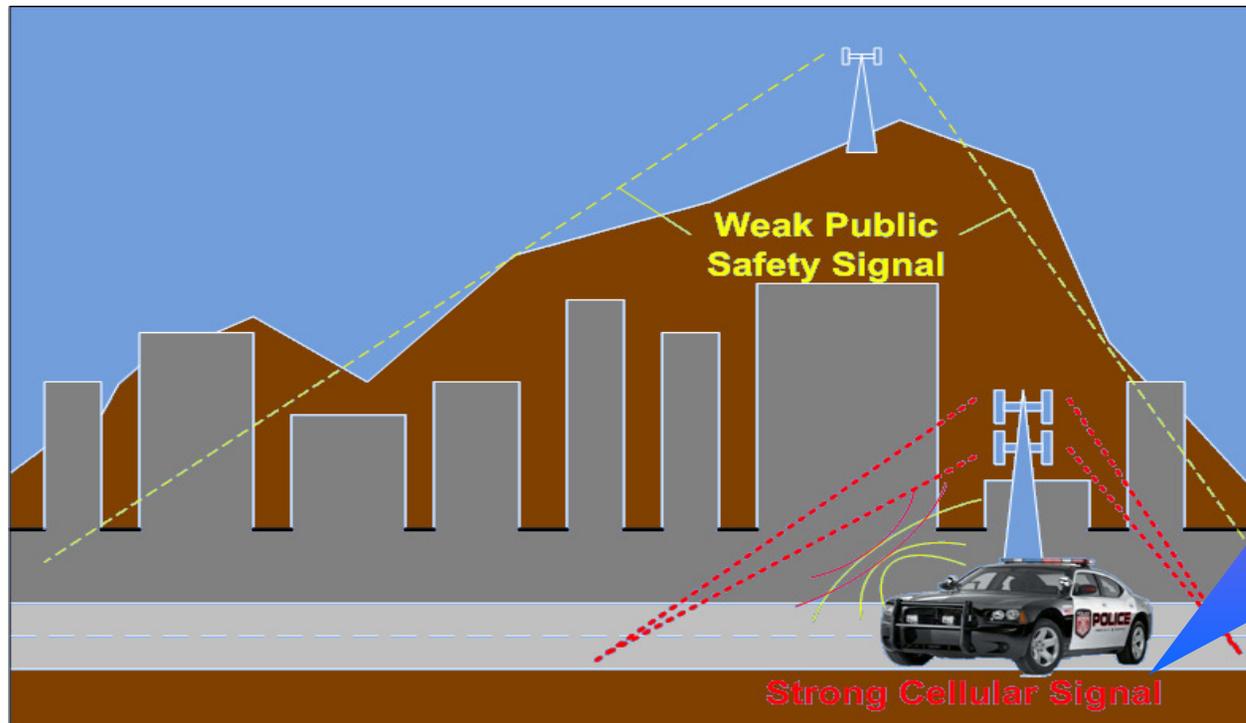
Beginning in 1999, public safety communications systems started experiencing interference (Intermodulation and OOBE) because their systems are located throughout the 800 MHz spectrum band – including adjacent to cellular systems

Spectrum allocation and receiver design meant that public safety receivers could “hear” the entire 800 MHz band

Sprint Nextel, cellular carriers and public safety licensees were operating in accordance with FCC rules and the terms of their licenses

Interference resolution measures addressed on a post-incident case-by-case basis

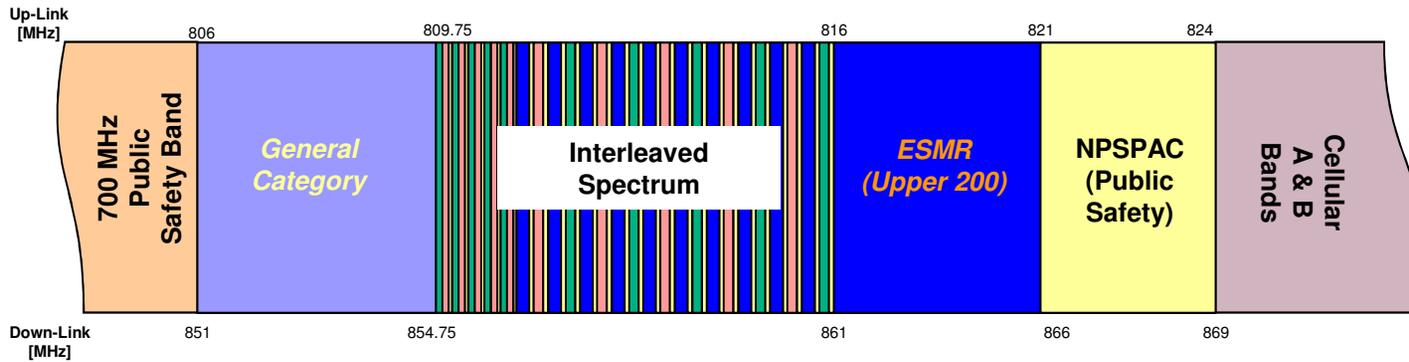
# Commercial System Design vs. Public Safety System Design



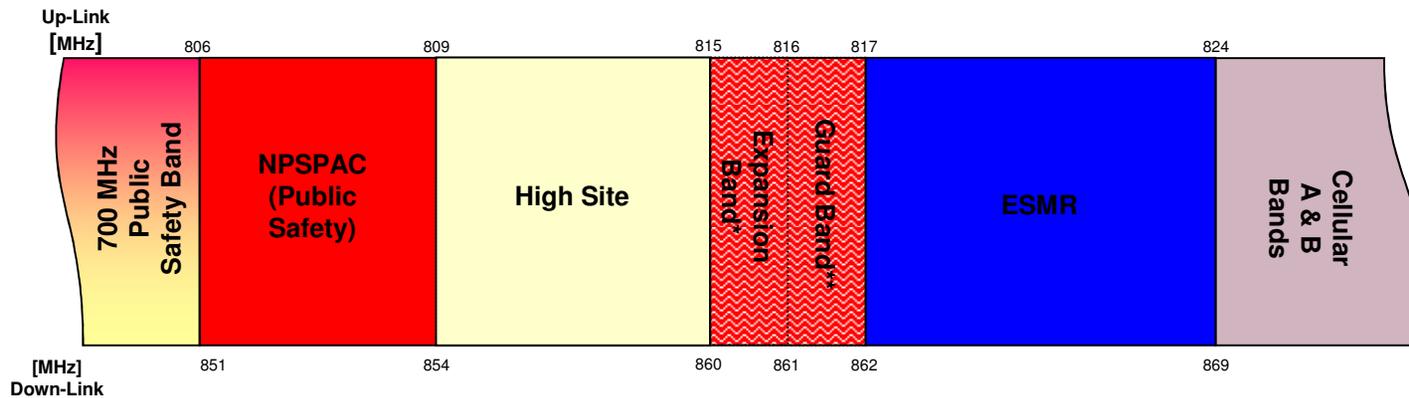
Weak public safety signal impacted by cellular carriers strong signal leading to interference.

De-interleaving public safety from ESMR and cellular channels (post-reconfiguration) minimizes potential for interference (and enables receiver re-design).

Before:



After:



\* No public safety system will be required to remain in or relocate to the Restricted 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-800 MHz Reconfiguration

- Separation of public safety systems into lower portion of 800 MHz band and cellular-type operations into upper-portion virtually eliminates the risk of 800 MHz CMRS-public safety interference.
- Post-band reconfiguration receivers can be designed to “hear” less of the 800 MHz band. Why not mandate by rule?
- FCC adopted minimum signal level requirements for public safety and other high-site systems as a “precondition” for CMRS interference protection.
- Commercial carriers are in a position to better manage their operations to prevent interference.