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# The Spectrum Exchange Auction

A presentation by

*Spectrum Exchange Group, LLC*

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*Spectrum Exchange Group, LLC*

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## Agenda

- Overview
- Importance of Early Clearing Agreements
- The Spectrum Exchange Auction
- How the Commission Can Facilitate Clearing
  - FCC Approval for Clearing
  - Continuing Cable Carriage
  - Relocation to Lower Channels
- The Importance of the FCC Acting *Now*

*Spectrum Exchange Group, LLC*

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- Spectrum Exchange mission:  
“To create value for the public by promoting the efficient exchange of spectrum.”
- Spectrum Exchange formed by the principals of Market Design Inc., the world leader in the design of high-stakes auction markets:
  - Peter Cramton, Chairman
  - Larry Ausubel, Co-President
  - Paul Milgrom, Co-President
  - Preston McAfee, Treasurer

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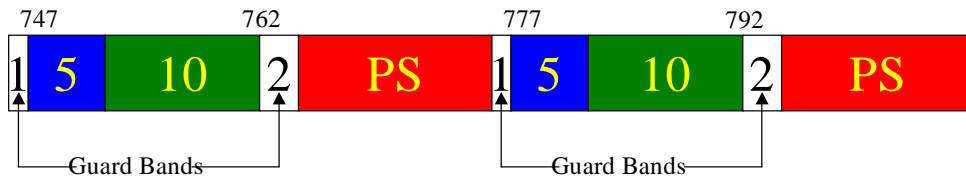
## Overview

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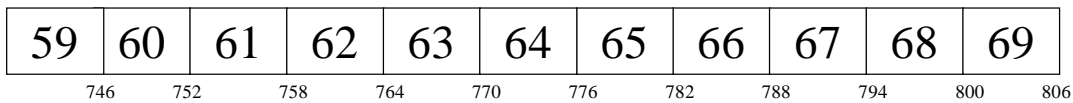
- FCC to auction 30 MHz in 700 MHz band on June 7, 2000
- 700 MHz spectrum has excellent propagation characteristics (can penetrate walls, etc.) and offers potential for wireless competition in broadband market
- Spectrum is encumbered by existing UHF broadcasters, blocking use by new licensees in most major markets
- Spectrum is worth *much* more if clear of incumbent broadcasters

# 700 MHz Band Plan

## Commercial / PS Band Channels

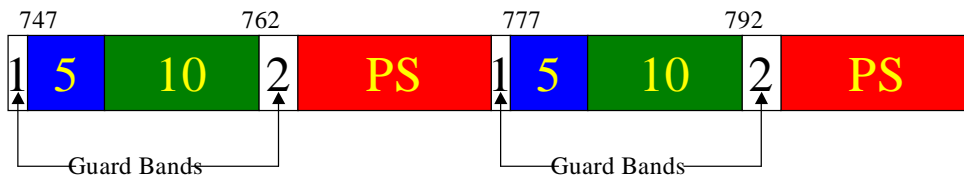


## UHF TV Channels

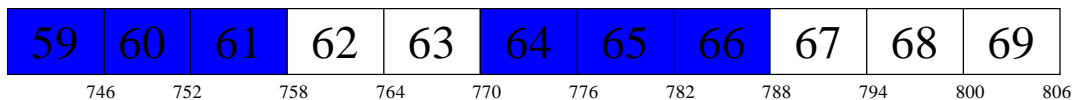


## **Incumbent broadcasters have co-channel and adjacent-channel protection**

## Commercial / PS Band Channels



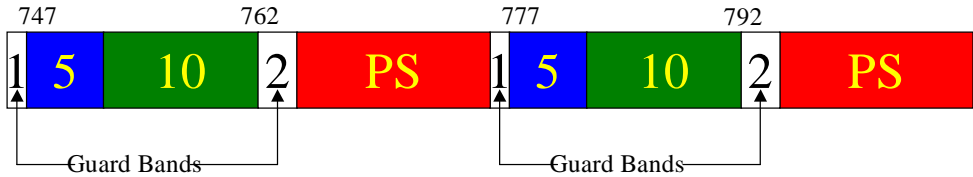
## UHF TV Channels



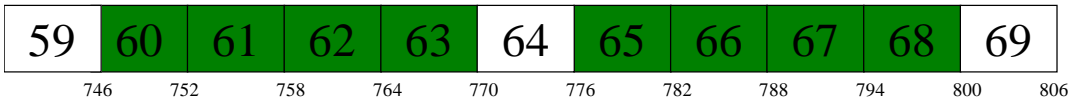
License C winner must clear 59-61 and 64-66

# Incumbent broadcasters have co-channel and adjacent-channel protection

Commercial / PS Band Channels



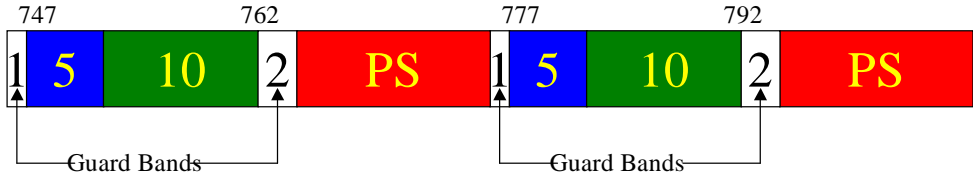
UHF TV Channels



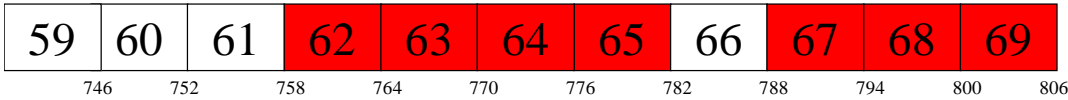
License D winner must clear 60-63 and 65-68

# Incumbent broadcasters have co-channel and adjacent-channel protection

Commercial / PS Band Channels



UHF TV Channels



Public Safety must have 62-65 and 67-69 cleared

## Overview (continued)

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- New broadband services in 700 MHz band require that broadcast operations in the band be cleared much sooner than the end of the transition to DTV
- Spectrum Exchange will conduct a private auction for the purpose of clearing the encumbered spectrum
- The Spectrum Exchange Auction will enable bidders in the FCC's 700 MHz Auction to bid with confidence that the spectrum will be cleared at an early date — and at a known cost

## Importance of Early Clearing Agreements

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- If incumbent broadcasters are not encouraged to enter clearing agreements before the FCC's auction, they will be in a position to hold out for the entire value of the cleared spectrum
  - Holdout will delay or prevent efficient spectrum use, destroying public value
  - Anticipating this, bidders in the FCC auction will bid very low
  - Winning bidders may be those best able to deal with incumbents, rather than those best qualified to use the spectrum
- Introducing one or more “comparable” stations and holding a clearing auction dramatically improves the situation
  - The competition shifts the bargaining away from the value of the cleared spectrum and toward the cost of clearing
  - Those stations that can clear at lowest cost will do so, thus minimizing the loss of broadcast service

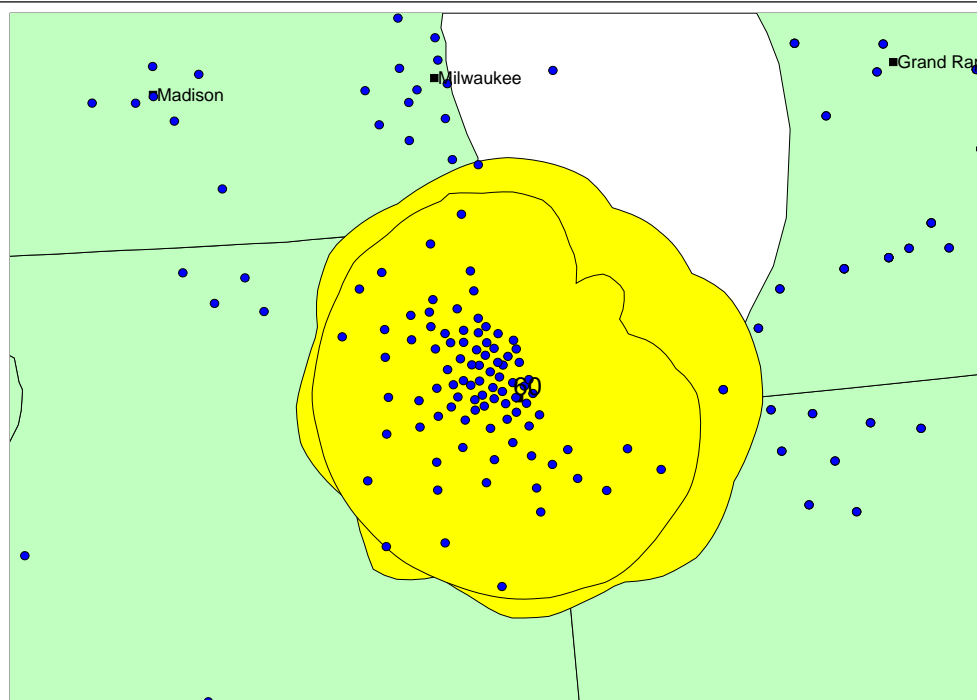
## Example of Relocation: Chicago

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- Four stations, collectively encumbering 100% of the commercial band, need to clear
  - WEHS 60 (Aurora, IL): broadcasts off Sears Tower
  - WJYS 62 (Hammond, IN): broadcasts 24 miles from Chicago (and its DT counterpart is licensed to broadcast off Sears Tower)
  - WGBO 66 (Joliet, IL): broadcasts off Hancock Tower
  - WEHS-DT 59 (Aurora, IL): licensed to broadcast off Sears Tower
- However, there is a total of 9 comparable analog stations (the 3 above, plus 6 other analog UHF stations) that could clear

## Chicago: UHF 60, 62, 66, 59DT

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# The Mechanics of the Clearing Auction

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- Spectrum Exchange will enter into contracts with applicants in the FCC Auction and with incumbent broadcasters
  - FCC applicants will agree to pay for the clearing at a price determined by the private auction
    - Cost-sharing: 2/3 by winner of D license; 1/3 by winner of C license; nothing by public safety
  - Broadcasters will agree to make their bids in the private auction contractually binding
    - Incumbent broadcasters (Channels 59–69) will receive incentive payments in return for their commitment to clear or relocate, to compensate them for the cost of relocating
    - If an incumbent broadcaster (Channels 59–69) wins the private auction, then it receives both the incentive payment and the amount determined by the private auction

## The Mechanics of the Clearing Auction (cont.)

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- The auction identifies stations that can clear at lowest cost
- The auction proceeds as a “descending clock”: the auction begins with the auctioneer naming a high price and allowing it to descend toward zero
- Stations periodically indicate whether they are “in” at the current price (i.e., willing to clear at that price) or “out”
- The auction concludes when only as many stations as are needed to clear remain in the auction

# How the FCC Can Facilitate Clearing

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- Allow early transition to DTV-only
- Assure transitioning broadcasters of continuing cable carriage
- Establish relocation rule for channel 59–69 broadcasters

# FCC Approval for Clearing

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- ¶145 of *First Report and Order*: “We will consider specific regulatory requests needed to implement voluntary agreements reached between incumbent licensees and new licensees in these bands.”
- If a broadcaster in channels 59–69 wishes to transition to DTV-only broadcasts before the end of the statutory transition period and if the broadcaster satisfies the Commission’s criteria for clearing, the Commission should expeditiously approve the broadcaster’s request
- As part of its Order on Petitions for Reconsideration, the Commission should establish “safe harbors” for early transition to DTV-only



# Cable Carriage

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- The 700 MHz spectrum is badly suited for the UHF television transmissions encumbering it. Most viewers of channel 59–69 stations today receive the signals through cable systems (or DBS), not by over-the-air transmissions
- *Example:* WRNN (Ch. 62, Kingston NY) has an over-the-air reach of only 250,000 homes but is transmitted through cable systems to 2.4 million households (*The New York Times*, April 26, 1998), implying over-the-air viewership  $\leq 5\%$
- Broadcasters will not transition to DTV early unless they are assured of continuing cable carriage
- There should be no artificial incentives for broadcasters to encumber the 700 MHz spectrum
- Broadcasters who end their over-the-air analog broadcasting should be assured that they will not lose cable carriage

# Relocation to Lower Channels

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- If a station in 59–69 does not wish to clear, but if another comparable station below 59 is willing to clear in its place, the station in 59–69 should be obliged to relocate to the cleared lower channel
- The clearing process will then focus on the cost of clearing, rather than on the value of clear spectrum

# The Importance of the FCC Acting *Now*

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- The 700 MHz auction could be a dismal failure without a path for clearing in place
  - New broadband services in the 700 MHz spectrum would be delayed or prevented
  - Holdouts would demand exorbitant clearing prices after the auction—preventing the clearing from occurring—while the public would receive low revenues from the FCC auction
  - Some potential bidders may be deterred while others would alter their system investments to improve their bargaining position
- Clear signals from the FCC will facilitate a pre-auction solution between the incumbent broadcasters and the new licensees

## For Further Information

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