Western Telecommunications Alliance

700 MHz Symposium

Jerry Beeks and Jay Preston – Ronan Telephone Company

Greg Whiteaker – Bennet & Bennet, PLLC

Warrick Jervis – Falkenberg Capital Corporation

Presentations in this Session

1. **Introduction to 700 MHz**
2. **The Upcoming Auction**
3. **Now That we own it . . .**
4. **Spectrum Valuation**

Western Telecommunications Alliance

Introduction to 700 MHz

Presented by:
Warrick Jervis, CFA

www.falkenbergcapital.com **wjervis@fcapital.com** **(303) 320-4800**

Topics

- **Background**
- **Spectrum Attributes**
- **Current Uses**
- **Expected, Future Uses**

Background

- Original 700 MHz auction was held in 2002 (Auction #44)
  - Not all the licenses sold, leading to two follow-on auctions
- Total of 18 MHz were sold in two spectrum blocks
  - One 12 MHz (paired) block in each MSA/RSA – 734 total
  - One 6 MHz (unpaired) block in each EAG – 6 total
- Pricing in the prior 700 MHz auctions were very low
  - Bad macro environment, the “Dark Days of Telecom”
  - Date when incumbents would vacate was not set
- Upcoming auction will include an additional 62 MHz

Background - Continued

- Why is 700 MHz spectrum becoming available?
  - The FCC mandated that current UHF broadcasters transition to digital transmission, which requires less spectrum
  - 700 MHz band (698 MHz to 806 MHz) encompass channels 52 through 69
  - Incumbents must cease analog transmission on these frequencies by February 17, 2009
  - In many rural areas, there is no interference and licensees can use the spectrum now
    - Probably 15+ fixed broadband deployments today

Spectrum Attributes

- 700 MHz has superior propagation characteristics compared to AWS, PCS and cellular frequencies
  - Longer Reach
    - Signal travels further
    - Important in areas with low population densities
      - Fewer sites are needed to provide service, which lowers upfront capital expenditures as well as recurring expenses
      - Can make serving remote areas cost-effective
    - Not as important in urban areas, where capacity is primary concern

Spectrum Attributes - Continued

- Better Penetration
  - Goes through trees, buildings and other obstacles better than higher frequencies
  - This is important in BOTH rural and urban areas
    - More forgiving in terms of LOS, regardless of application
    - Extensive in-building coverage is important, particularly if pursuing landline replacement

Current Uses

- Two applications *today*
  - Broadcast mobile TV
    - Qualcomm/MediaFLO has Lower D-Block nationwide (6 MHz, unpaired)
    - Aloha/HiWire is largest licensee of C-Block (12 MHz, Paired)
    - High power limits makes broadcast viable
  - Fixed Broadband
    - A variety of vendors and technologies

Expected, Future Uses

- Mobile, cellular-type services
  - Not aware of any deployments today, but evidence points towards mobility:
    - Public Safety will be receiving spectrum in the band, and they need mobility
      - Lucent did a trial at CTIA this past Spring, using CDMA technology
    - Likely auction participants include Verizon, ALLTEL and other mobile voice and data service providers
  - Likely that CDMA-based equipment will be available prior to GSM