



July 29, 2011

Marlene H. Dortch, Esq.
Secretary
Federal Communications Commission
445 12th Street SW
Washington DC 20554

Re: Notice of Ex Parte Communication, ET Docket No. 10-235

Dear Ms. Dortch:

On July 28, 2011, Jane Mago, Kevin Gage, Victor Tawil, Bruce Franca and the undersigned of the National Association of Broadcasters (NAB) met with Bill Lake and Rebecca Hanson of the Media Bureau, John Leibovitz and Robert Alderfer of the Wireless Bureau, and Alan Stillwell of the Office of Engineering and Technology.

During the meeting, NAB staff presented a "Spectrum Impact" study (attached) that shows the likely impact on TV broadcast stations of reducing the number of channels available for broadcast television stations, whether through an FCC-guided incentive auction or otherwise.

The Study identifies the current number of licensees for full power, Class A and low power television on the frequencies that are now operating on and would have to be cleared from those channels to reallocate 120 MHz, 84 MHz, 60MHz and 30 MHz of spectrum to new users. NAB's analysis then examined how many of those licensees could be accommodated in a repacking scenario. It therefore helps approximate the minimum number of stations and their associated markets that would have to participate in an incentive auction in order to clear these amounts of spectrum.

The Spectrum Impact study includes these key findings:

- In the event that 120 MHz of broadcast TV spectrum (the amount called for in the National Broadband Plan) would be reallocated, 672 full-power TV stations in the continental United States (the number of stations currently occupying channels above 30) will be directly affected. Those stations must either

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volunteer in an incentive auction to turn in their licenses or share channels with a station below channel 30, or be relocated to another channel below channel 30. Likewise, 209 Class A stations would be affected, as would more than 3,200 LPTV stations.

- Because of existing treaties, repacking will be especially difficult in television markets located near the international border with Canada. In many of those markets, at least half of the stations would be required to go dark or channel share.
- The Study also notes that stations licensed in bands below the channels to be reallocated would be affected during the repacking process. To accommodate more stations in a smaller TV band, the study estimates that 800 to 1200 full power TV stations would be required to move channels, more than double the channels that changed channels as a result of the recent transition to digital television.

NAB Staff answered FCC questions regarding the study during and after the presentation. Those questions focused on a few specific issues, including the impact that Canada's transition to digital TV will have on the United States' efforts to repack broadcast spectrum. NAB Staff noted that the DTV transition in Canada was still in the early stages with only 29 major markets identified for transition and that the eventual transition to new channels by these and the remaining Canadian stations is likely to make a repacking of TV stations in US border markets more difficult because many of those new Canadian channel assignments will occupy channels below 30.

Please direct any questions regarding this matter to the undersigned.

Respectfully submitted,



Scott Goodwin
Associate General Counsel
Legal and Regulatory Affairs

Cc: Rebecca Hanson
Bill Lake

Marlene H. Dortch, Esq.
July 29, 2011

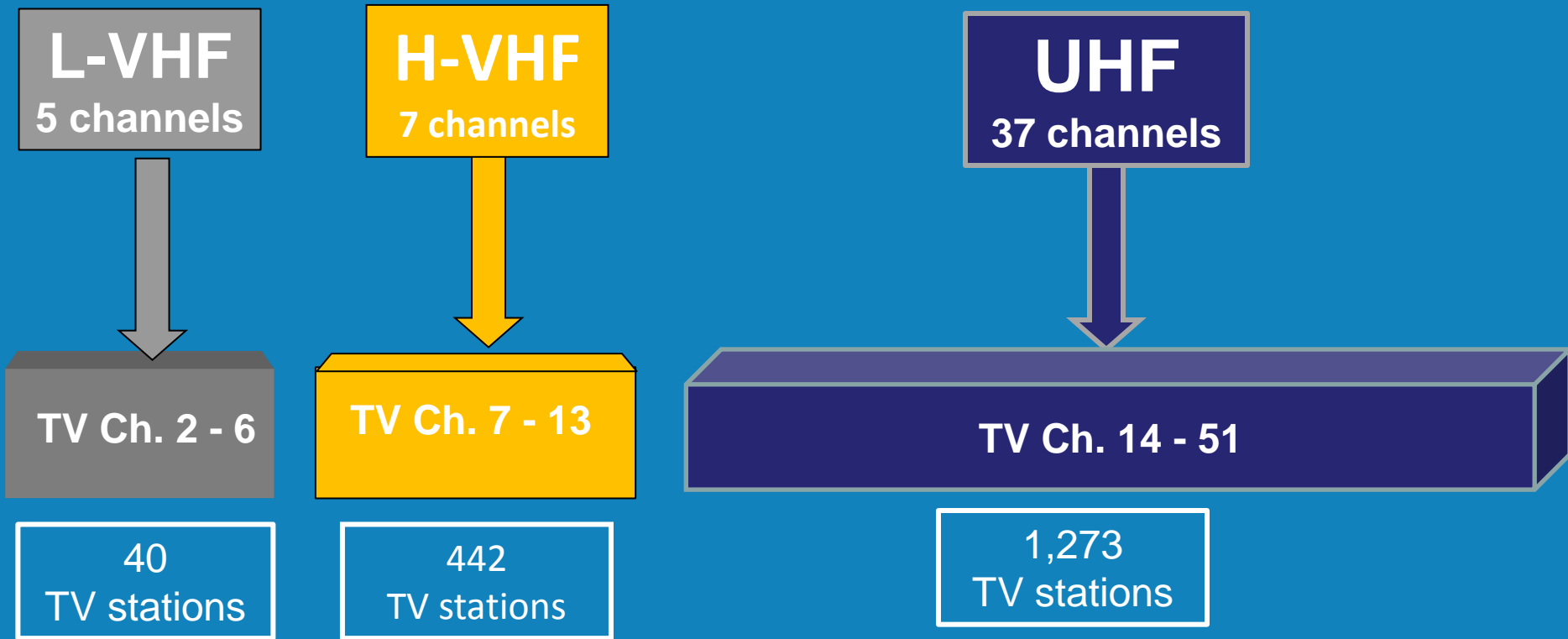
John Leibovitz
Robert Alderfer
Alan Stillwell

Spectrum Impact Studies

FCC Presentation

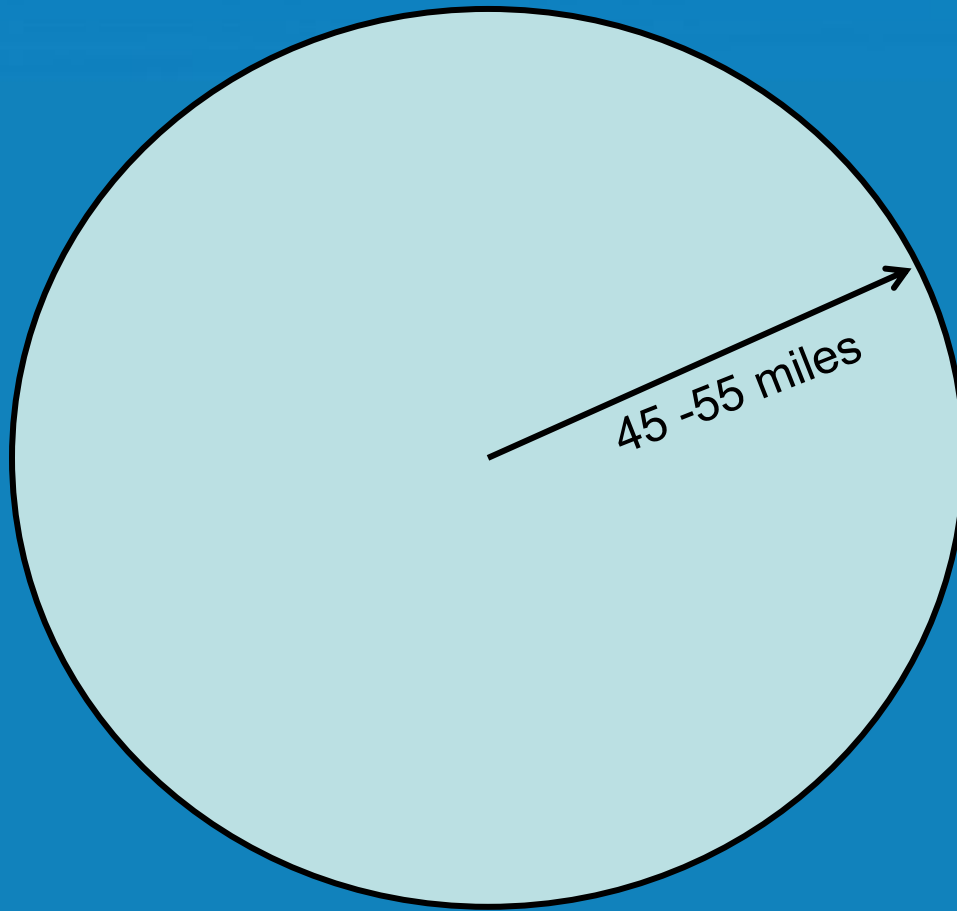
July 2011

Full Power TV Stations *(Continental US)*

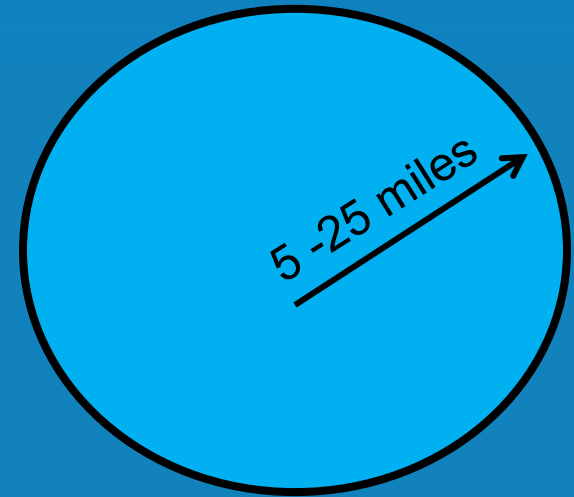


Total: 1,735 TV Stations

Type of Broadcast TV Stations



Full Power



Class A

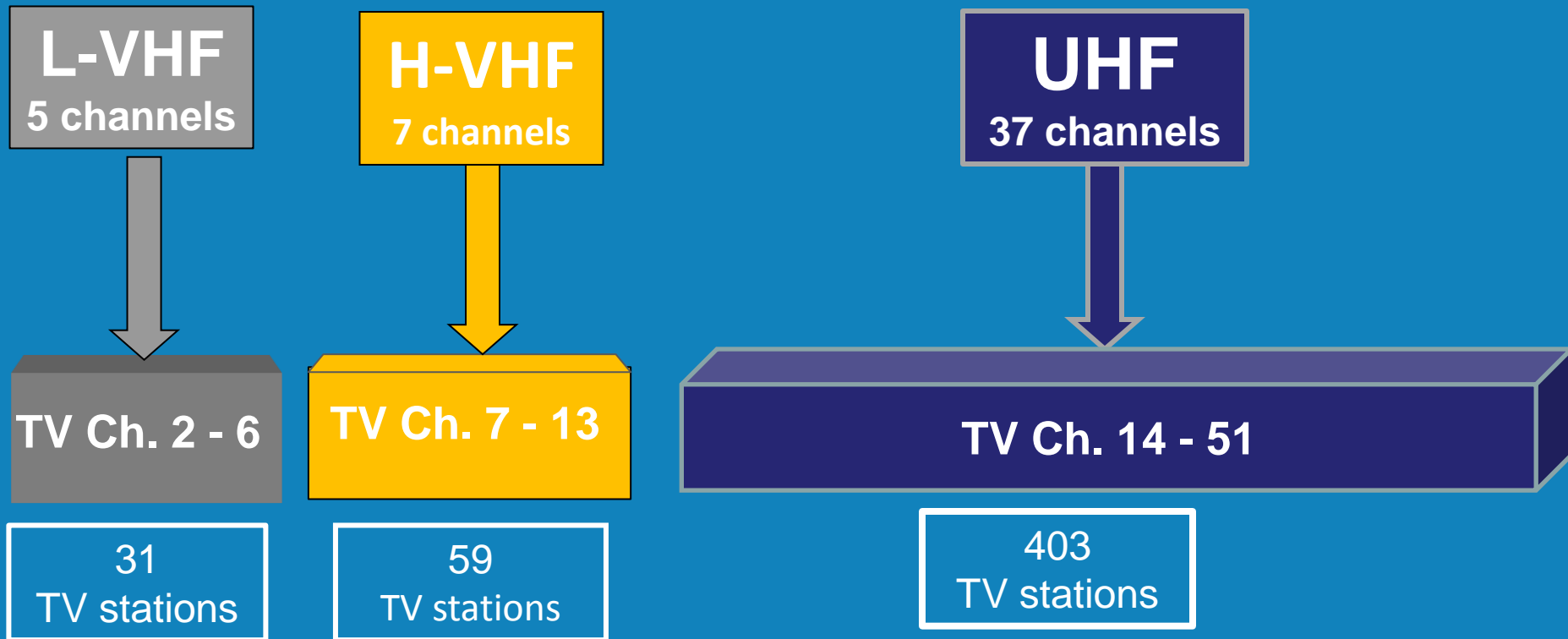
- Minimum amount of original programming
- Some interference rights

LPTV/Translators

- Mostly fill-in and extension of full power service
- Can be displaced by Full power stations

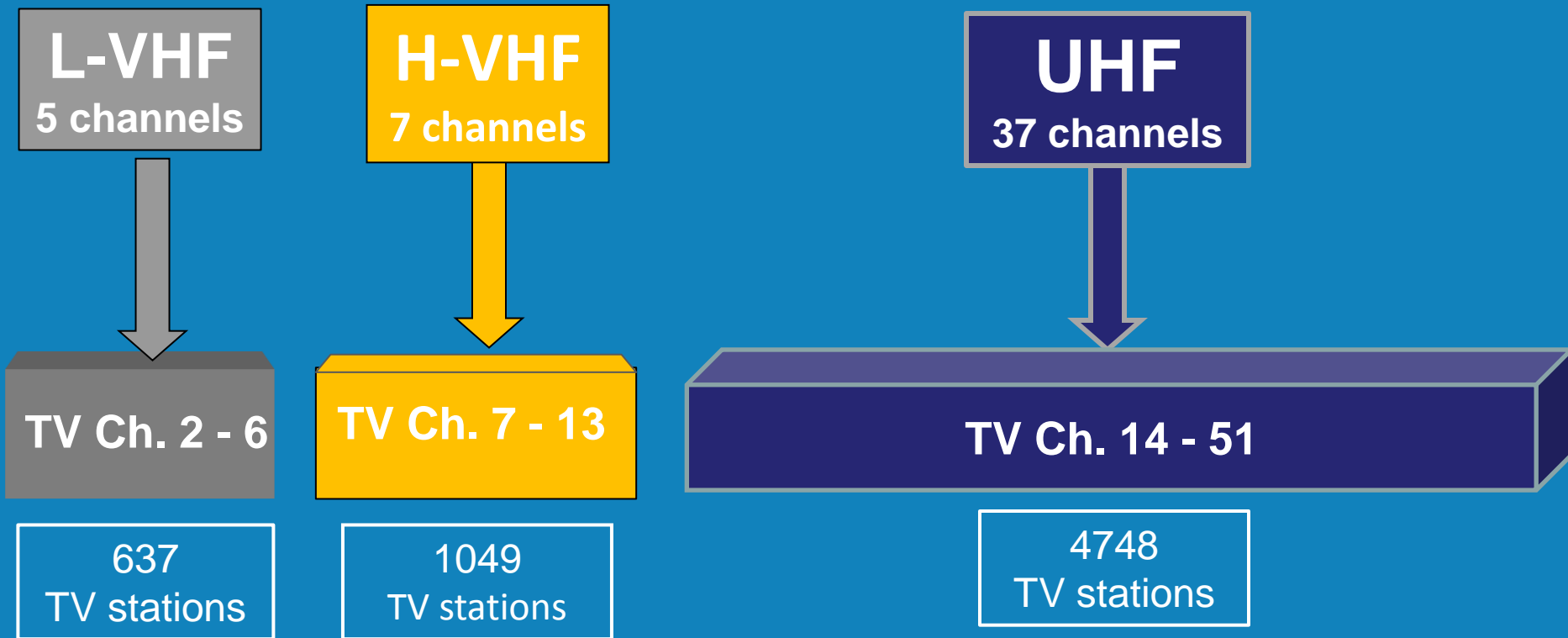
Class A TV Stations

(Continental US)



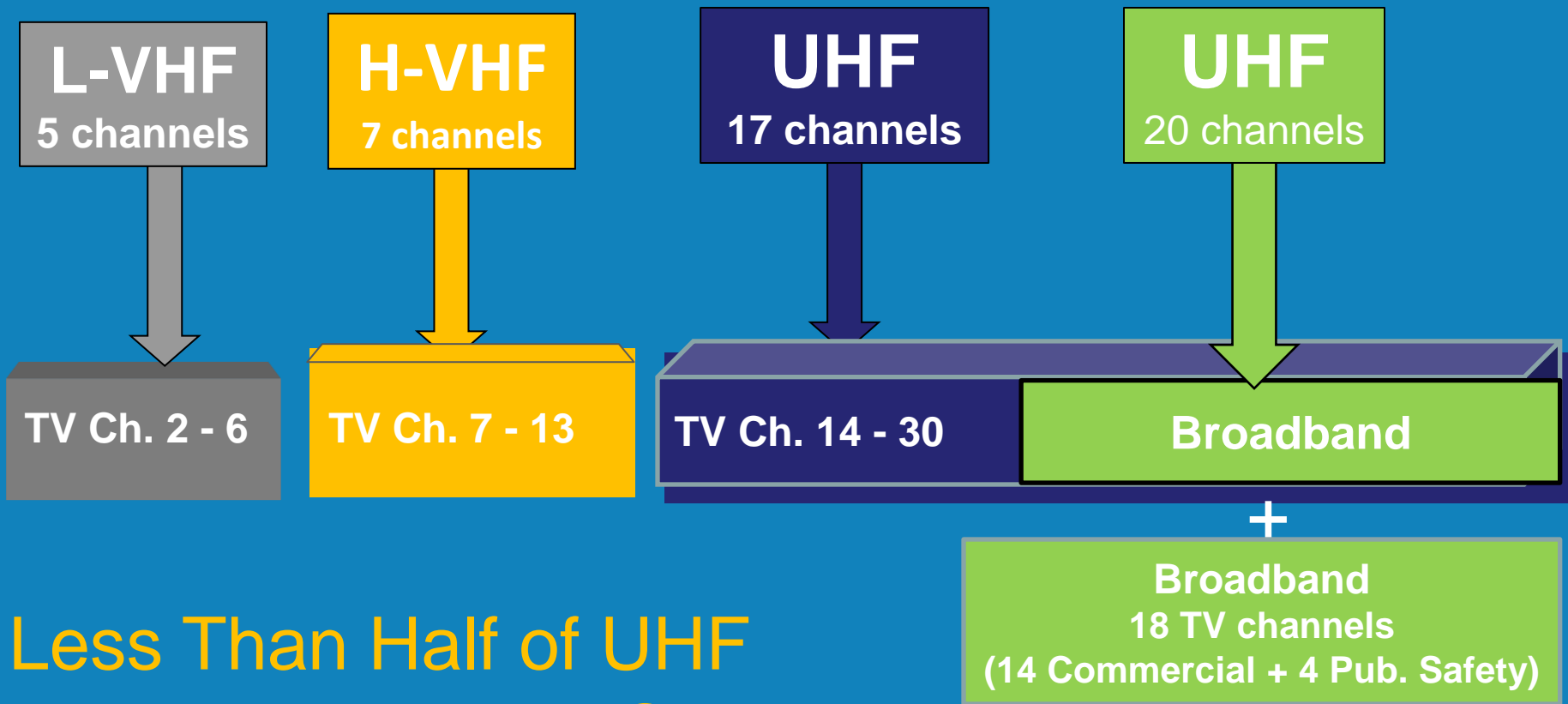
Total: 502 Class A TV Stations

Translators/LPTV *(Continental US)*



Total: 6,434 Translator/LPTV Stations

Broadband Plan to Reclaim an Additional 120 MHz



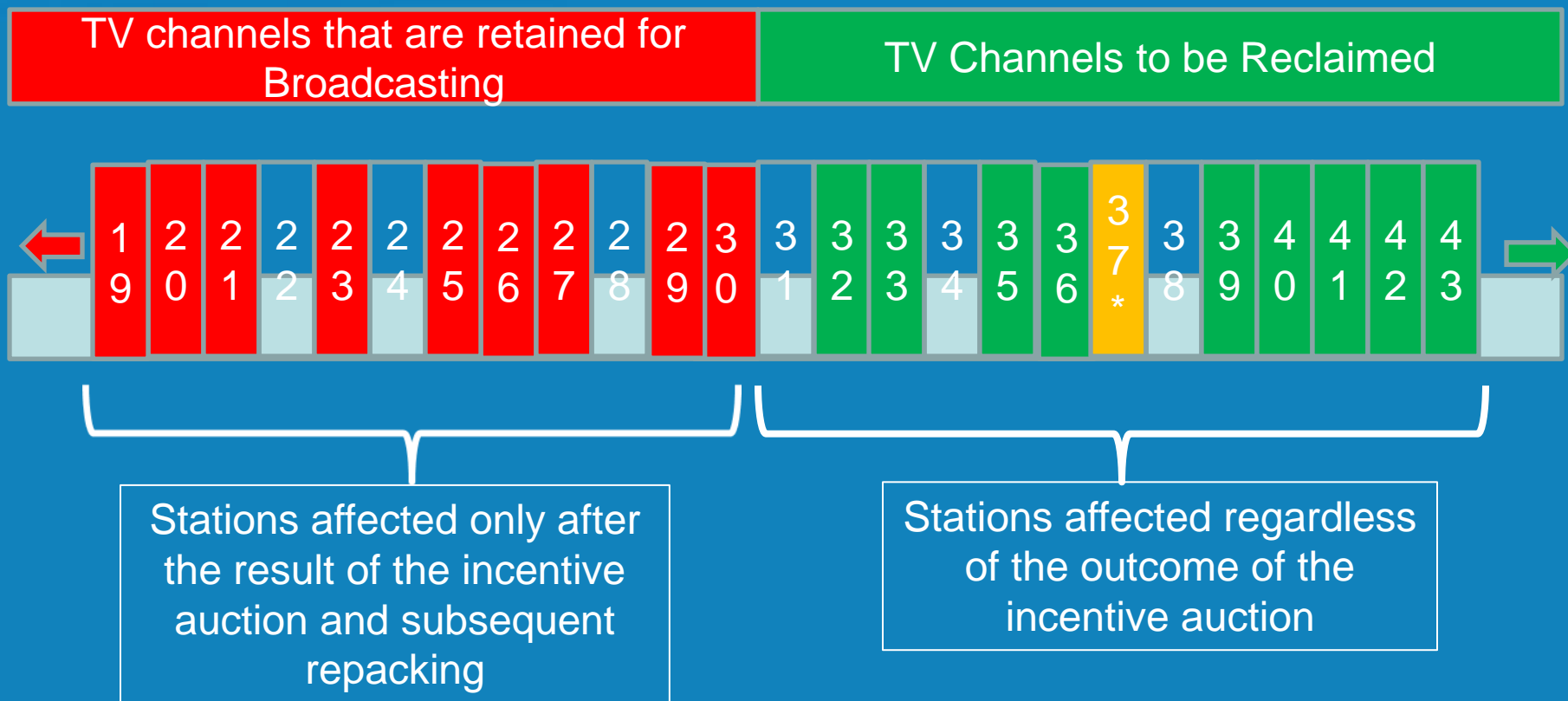
Less Than Half of UHF
Band Remains TV Spectrum

Impact on Broadcasters Who Elect to Stay

Two Classes of Stations:

- 1. Stations located in spectrum to be reclaimed and must be relocated to lower channels*
- 2. Stations located in spectrum that remains broadcasting but must be moved due to repacking to accommodate displaced stations in 1 above*

Impact on Stations who Elect to Stay (120 MHz example)



*Channel 37 is assigned for Radio Astronomy

Number of Stations (Full Power, Class A & LPTV) that are Directly Affected by Reclaiming 120 MHz

Station Type	Total Number of Stations	Number of Stations above Ch. 30
Full Power	1,735	672
Class A	502	209
LPTV	6,434	3,214
Total	8,671	4,095

Full Power Stations above Ch. 30 by Affiliation

Affiliation	# of Stations above Ch.30	Percent of Total
ABC (incl. O&O)	53	24%
CBS (incl. O&O)	60	27%
NBC (incl. O&O)	75	33%
FOX (incl. O&O)	68	35%
UNIVISION	23	48%
TELEMUNDO	16	73%
ION	43	70%
PBS	106	36%

Affiliation	# of Stations above Ch.30	Percent of Total
MyNetwork	42	66%
CW	50	53%
ETV	11	44%
TELEFUTURA	11	58%
Trinity	18	53%
Independent stations	77	52%

Broadcast Stations to be Relocated to Lower Channels

Amount of Spectrum Reclaimed	Station Type	Total Number of TV Stations	Number of TV Stations Affected	Total number of TV Stations Affected
120 MHz	Full Power	1,735	672	4,095
	Class A	502	209	
	Low Power	6,434	3,214	
84 MHz	Full Power	1,735	450	2,826
	Class A	502	143	
	Low Power	6,434	2,233	
60 MHz	Full Power	1,735	320	2,072
	Class A	502	101	
	Low Power	6,434	1,651	
30 MHz	Full Power	1,735	148	1,078
	Class A	502	50	
	Low Power	6,434	880	

Market	Number of Broadcast Stations (Full power, Class A, LPTV) Required to Be Relocated to Lower Channels*				
	120 MHz	90 MHz	84 MHz	60 MHz	30 MHz
New York	42 stations	32 stations	30 stations	23 stations	12 stations
Los Angeles	66	51	48	33	23
Chicago	21	19	18	12	6
Philadelphia	26	20	18	12	5
Boston	21	12	12	6	2
San Francisco	33	27	25	18	9
Dallas/Ft. Worth	25	19	18	13	7
Washington, DC	35	27	26	17	8
Atlanta	22	17	17	12	8
Detroit	10	9	9	6	3
Minneapolis/St. Paul	64	46	46	37	24
Phoenix	96	75	70	50	24
Portland, OR	55	45	40	28	12
Bend, OR	9	6	6	3	2
Eugene, OR	44	33	31	22	13
Medford-Klamath, OR	50	39	36	25	17
Denver, CO	141	110	102	72	36
Salt Lake City, UT	580	422	390	277	141 ¹²

REPACKING

Relocation of TV Stations to Different Channels

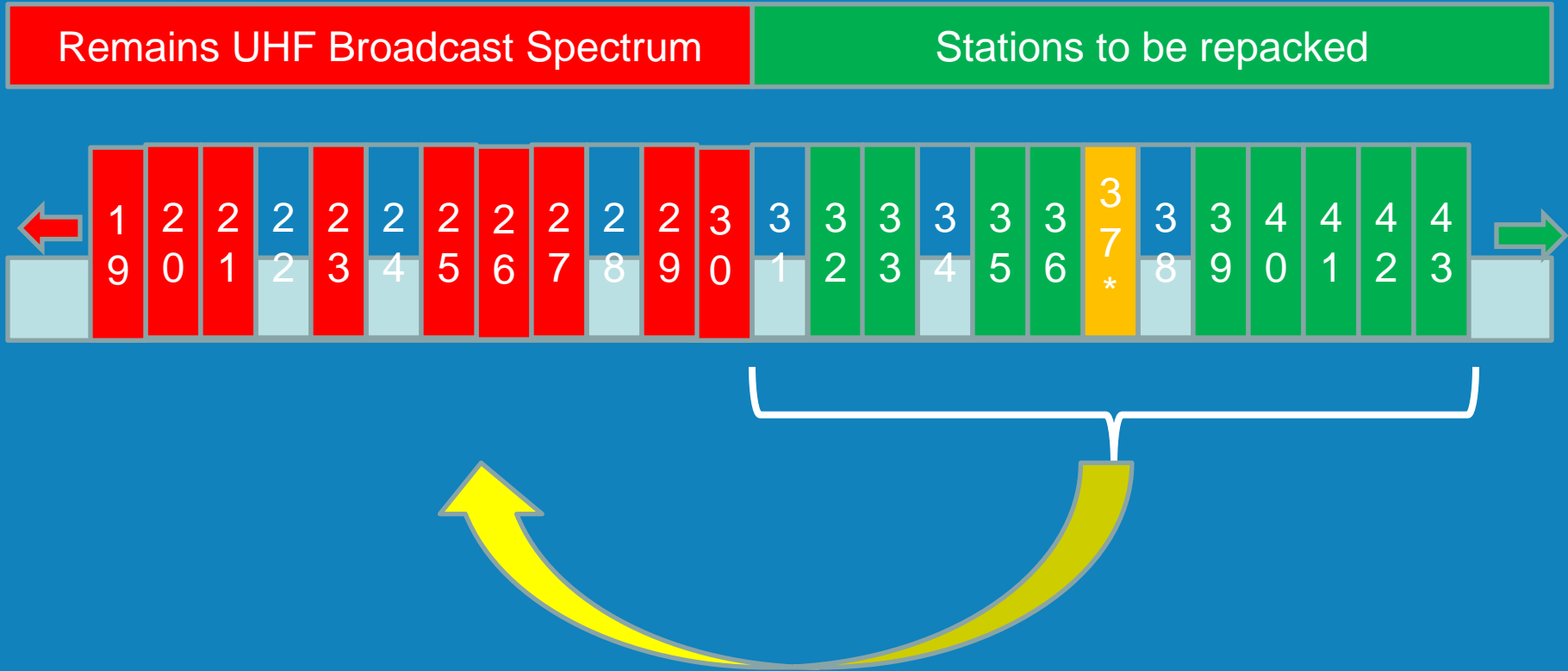
120 MHz

84 MHz

60 MHz

30 MHz

Repacking (120 MHz example)



*Channel 37 is assigned for Radio Astronomy

TV Spectrum Recovery Investigation

- How much TV Broadcast spectrum can the FCC recover and what is the impact on existing TV stations?
 - Broadcast Industry investigated at least 150 scenarios and permutations that considered Full power stations, Class A and LPTV and the impact of the Canadian and Mexican border treaties on repacking
 - Repacking was optimized to accommodate the maximum number of stations nationwide

Industry Repacking Studies

(updated June 2010)

- Question: What is the impact of recovering 120 MHz of contiguous spectrum from the UHF band?
- Factors considered
 - 1735 full power DTV stations*
 - Protection of Public Safety/Land Mobile
 - 502 class A LPTV stations*
 - Canada/Mexico treaty obligations

*Consistent database used /totals include stations in continental US only

Industry Repacking Study Results

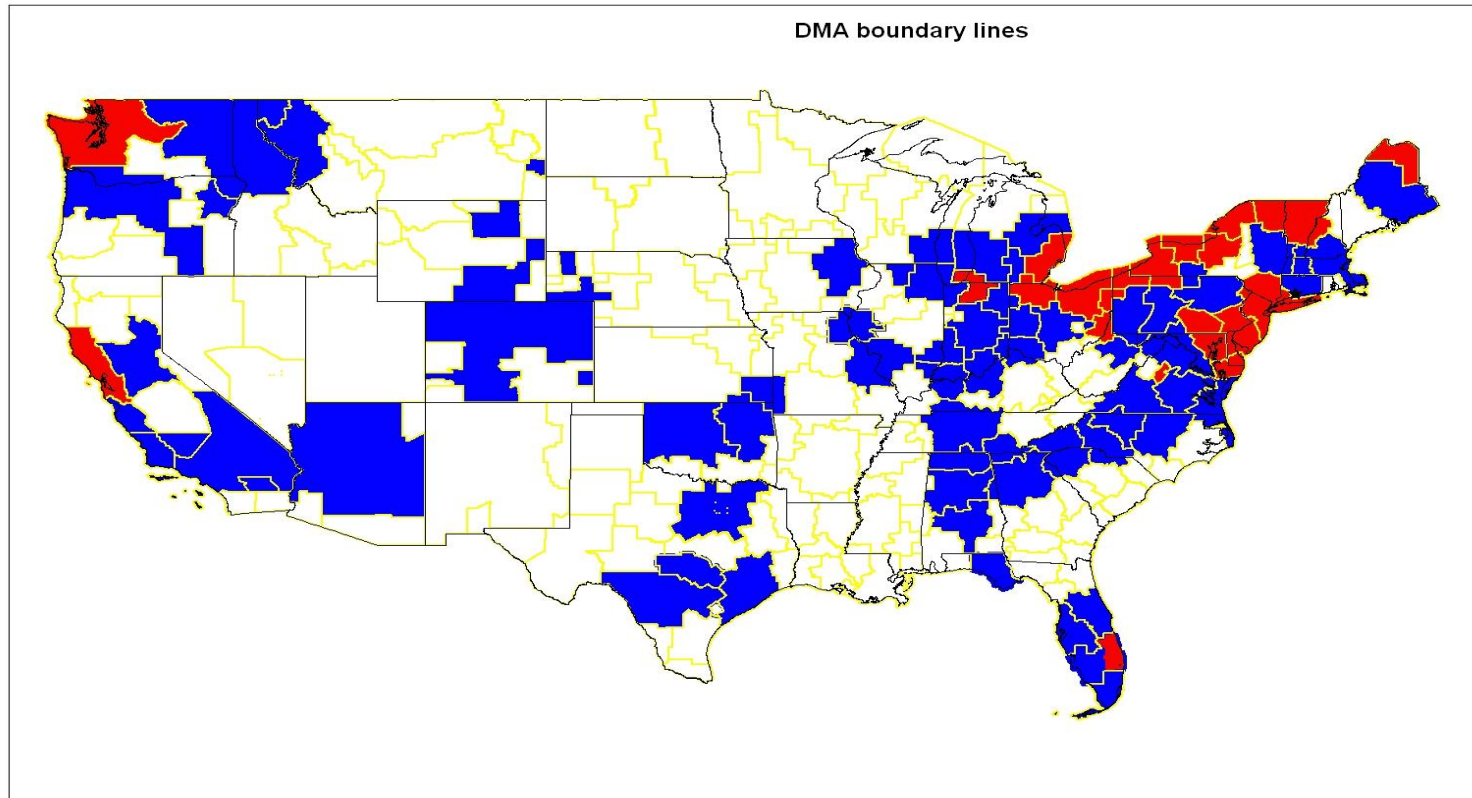
(Updated June 2010)

- How many stations can not be given a channel assignment and must relinquish their channel or share with another station?

Scenario	Stations Not Accommodated and Required to Share Channel with Another Station/total number of DMAs
Full Power, No Class A, No Border Protection	131 stations in 42 DMAs
Full Power, Class A, No Border Protection	303 stations in 65 DMAs
Full Power, Class A, Border Protection	391 stations in 86 DMAs

DMAs Not Accommodated

Full Power, Class A, Border Protection



 DMAs where ALL stations must channel share

Channel Shortfall

(Full Power , Class A, Border Protection)

DMA Rank (2010-2011)	Market	Number of TV Stations	TV Stations With No Channel
1	New York	27	16
2	Los Angeles	29	14
3	Chicago	22	6
4	Philadelphia	24	14
5	Dallas-Ft. Worth	20	2
6	San Francisco-Oakland-San Jose	28	14
7	Boston	23	9
8	Atlanta	18	2
9	Washington, DC	22	9
10	Houston	19	4
11	Detroit	14	14
12	Phoenix	25	2
13	Seattle	18	10
14	Tampa	19	4
15	Minneapolis-St. Paul	20	0

Number of Stations that Must Vacate

Amount of UHF Spectrum Reclaimed	Station Type	Number of Stations Not Accommodated (Border Protection)
120 MHz	Full Power	210
	Full Power + Class A	391
	Full Power + Class A + LPTV	2,530
84 MHz	Full Power	108
	Full Power + Class A	215
	Full Power + Class A + LPTV	1,776
60 MHz	Full Power	79
	Full Power + Class A	151
	Full Power + Class A + LPTV	1,417
30 MHz	Full Power	54
	Full Power + Class A	102
	Full Power + Class A + LPTV	1,095

Shortfall for Full Power TV Stations

(full power, and border protection)

DMA Rank (2010-2011)	Market	Number of Full Power Stations	Stations With No Channel
1	New York	23	11
2	Los Angeles	27	13
3	Chicago	16	4
4	Philadelphia	19	12
5	Dallas-Ft. Worth	18	1
6	San Francisco-Oakland-San Jose	23	13
7	Boston	21	5
8	Atlanta	14	0
9	Washington, DC	19	5
10	Houston	18	2
11	Detroit	9	9
12	Phoenix	19	0
13	Seattle	17	10
14	Tampa	14	3
15	Minneapolis-St. Paul	18	0

STATION & VIEWERS DISRUPTION

Full Power Station Disruption

2009 DTV Transition

- Recovered 108 MHz (Ch. 52 to 69)
- 174 DTV stations on spectrum to be cleared
- No stations had to go off-the-air
- About 450 stations changed channels

Incentive Auction Approach

- Proposes to Recover 120 MHz (Ch. 31 to 51)
- 672 DTV stations on spectrum to be cleared
- Minimum of 210 (391 w/Class A) stations in 61 (86 w/Class A) DMAs must go off-the-air
- 800 to 1200 full power stations likely required to change channels

Full Power Station Disruption

Best Case

(Small Channel Change, e.g. 31 to 29)

- Minor Change in Transmitter (\$100K)
- New/Modification of ATSC Mask Filter (\$100K)
- New/Modification of Combiner (\$100K)
 - 60% stations share tower/antennas

More Typical Cases

- New Transmitter (\$750K)
- New Antenna and Transmission Line (\$200-750K)
- New Filter (\$100-300K)
- New Combiner (\$100-300K)
- Larger antenna may require tower reinforcement or new tower (\$200K-1.8M)

Total Costs Estimated to be ~ \$2.5 B

Viewer Disruption

- Temporary Disruption
 - Between 800 to 1200 stations will experience viewer disruption ranging between a few hours to a few weeks while station facilities are modified
- Viewers Permanent Disruption/Loss
 - A minimum of 391 stations must also go off-the-air to achieve FCC spectrum goal
 - 86 DMAs must lose full power TV stations and Class A

150M Viewers lose access to 4 stations/TV channels

>100M Viewers lose access to 6 stations/TV channels

>50M Viewers lose access to 14 stations/TV channels

Viewer Impact : Population vs. Channels Lost

