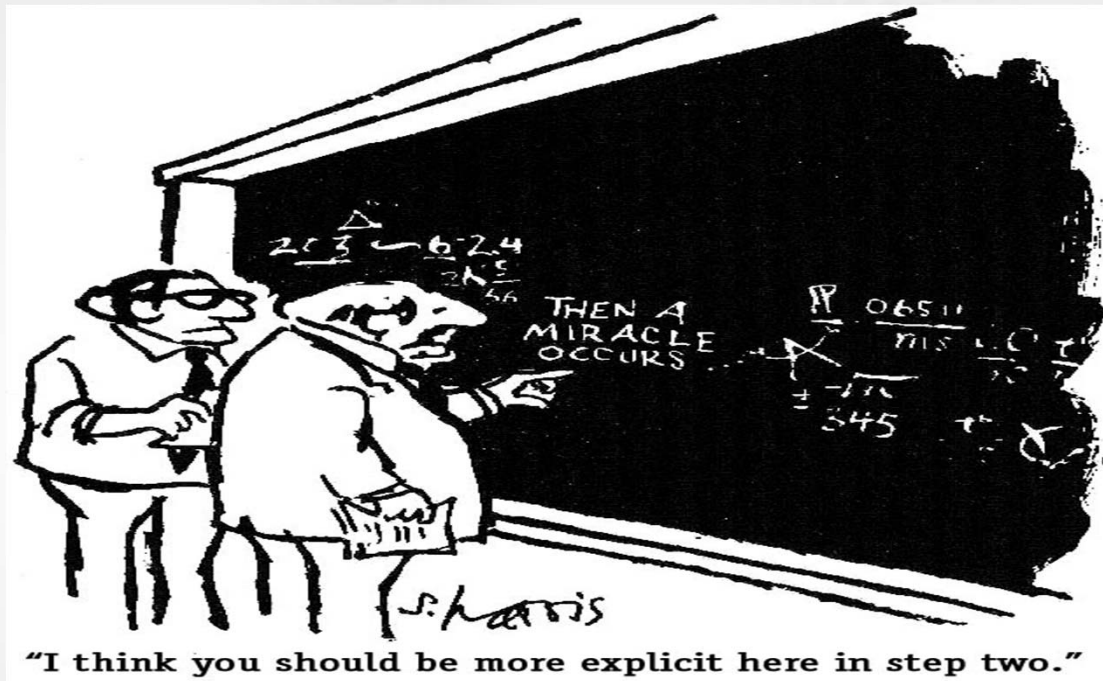




Broadcast TV Repack

Bruce Franca
Sr. VP, Spectrum Policy

Broadcast TV Repack



Incentive Auction Recap

- 2195 “auction eligible” stations
- 145 stations “bought”
- 2050 “auction eligible” stations remain on-the-air
- 84 MHz less broadcast spectrum or 14 TV channels (Chs. 38-51) reassigned to wireless operations

Wireless Winners

T-Mobile \$8B



Dish \$6.2B



AT&T \$910M



Comcast \$1.7B



Source: Spectrumgateway.com



Broadcast TV Repack

- 987 stations (996 transmitters) of 2050 stations required to change channels
 - 779 are full power TV stations
 - 208 are Class A stations
- Somewhat higher number of stations required to be repacked than anticipated for 84 MHz scenarios



Channel Changes by the Numbers

- 4 stations with $\geq 0.5\%$ contour loss
- 402 stations with $\geq 0.5\%$ area loss*
- 115 stations with $\geq 0.5\%$ population loss*
- 308 stations population served increased

- 13 U-VH channel changes
- 16 U-VL channel changes
- 68 V-V channel changes

*Interference-free area or population



FCC Repacking Plan

- Full power/Class A stations must cease operating on 600 MHz no later than 39 months from *CCR Public Notice*
- Stations going off-air must cease broadcasting within 90 days of receiving payment
- Reassigned stations to have three months to file CPs
- Two later filing windows
 - Stations unable to build or adversely impacted by reassignment
 - Other changes
 - DOES NOT CHANGE BUILD-OUT DATES
- Some FCC Repacking Plan Remedies: auxiliary antenna, channel sharing, silent authority or “go dark”



FCC Repacking Plan

- On April 13, 2017, FCC released the *Closing and Channel Reassignment* Public Notice
- Starts 90-day clock for CPs
 - CPs for new channels due July 12, 2017
 - Estimates for relocation costs also due July 12, 2017
- FCC also assigned each station to be repacked to one of ten repacking phases

Repack Phases

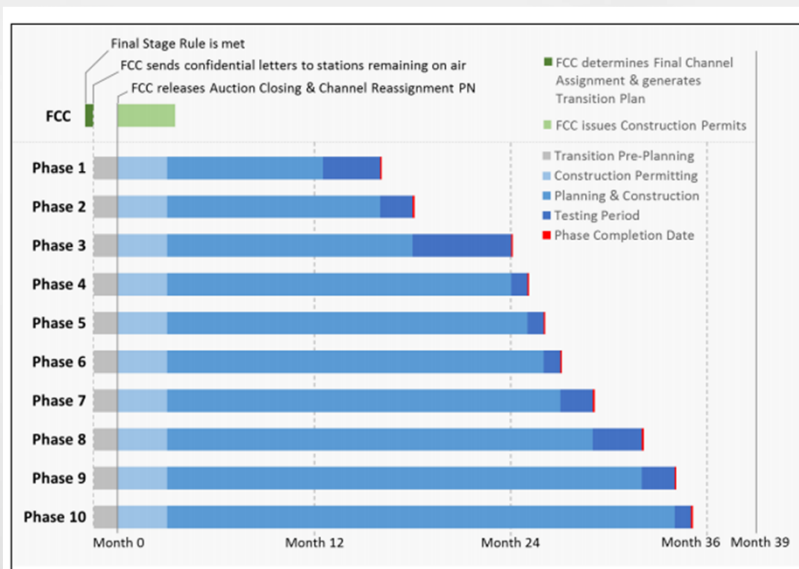


Figure 7: Phase Timelines at 84 MHz Scenario A

- Each repack station assigned to one of ten phases
- Each phase includes:
 1. same 90 day CP filing requirement;
 2. construction period;
 3. testing period; and,
 4. phase completion date
- Next phase testing period begins **one day** after the previous phase completed



Repack Phases - Testing Dates

Phase No.	Start Date	Completion Date	# Stations
1	9/14/2018	11/30/2018	90
2	12/1/2018	4/12/2019	113
3	4/13/2019	6/21/2019	105
4	6/22/2019	8/2/2019	110
5	8/3/2019	9/6/2019	114
6	9/7/2019	10/18/2019	114
7	10/19/2020	1/17/2020	113
8	1/18/2020	3/13/2020	114
9	3/14/2020	5/1/2020	76
10	5/2/2020	7/3/2020	51



Problems/Matters Not Considered

- Timing – creating a schedule without knowing what has to be done
- Use of T-band channels – 190 stations assigned to channels 14-21
- Impact on FM radio - not calculated or considered
- Impact on TV translators and LPTV - not calculated or considered



Impact on Land Mobile

- 190 TV stations reassigned to “T-band (channels 14-21)” channels
- Interference to Land Mobile a major concern
 - WETA in DC assigned to channel 14
 - KSEE assigned to channel 16, the same channel the station was “moved off” of by the FCC in 2004 because of interference to land mobile and public safety

Impact on FM Stations

- Repack impact on FM radio stations
 - FM stations may have to go off-the-air while tower work is done on TV repack
- NAB study focused on RF radiation (RFR) and shared towers
- Preliminary results
 - 631 FMs potentially affected
 - 395 of these FMs have no aux
 - Single FM station can be affected by up to 8 TV stations
 - Many FMs impacted in more than one phase



TV Translators Important to NAB Members

- KOAT-TV relies on a state-wide system of 31 translators to serve Albuquerque-Santa Fe DMA
 - Translators cover approximately 47 percent of DMA and serve about 285,000 television households, or 39% of all households
- KATU uses 8 translators to serve Portland, Oregon DMA.
 - KATU's translators provide service to more than 590,000 people, reaching more than 20 percent of its television households
- WGEN-TV, Key West, Florida has a network of 5 translators that provide Spanish-language programming throughout Florida Keys



Impact on Translators and LPTV

- 987 stations to be repacked does not include impact on LPTV and TV translators
- 5726 LPTV and TV translators listed in May 10th database
 - 1742 (or more than 30%) LPTV and TV translators operate on channel 38 and above and will have to move or cease operation
 - Number of TV translators and LPTVs impacted by repacking ????
- NAB currently studying impact of repacking changes

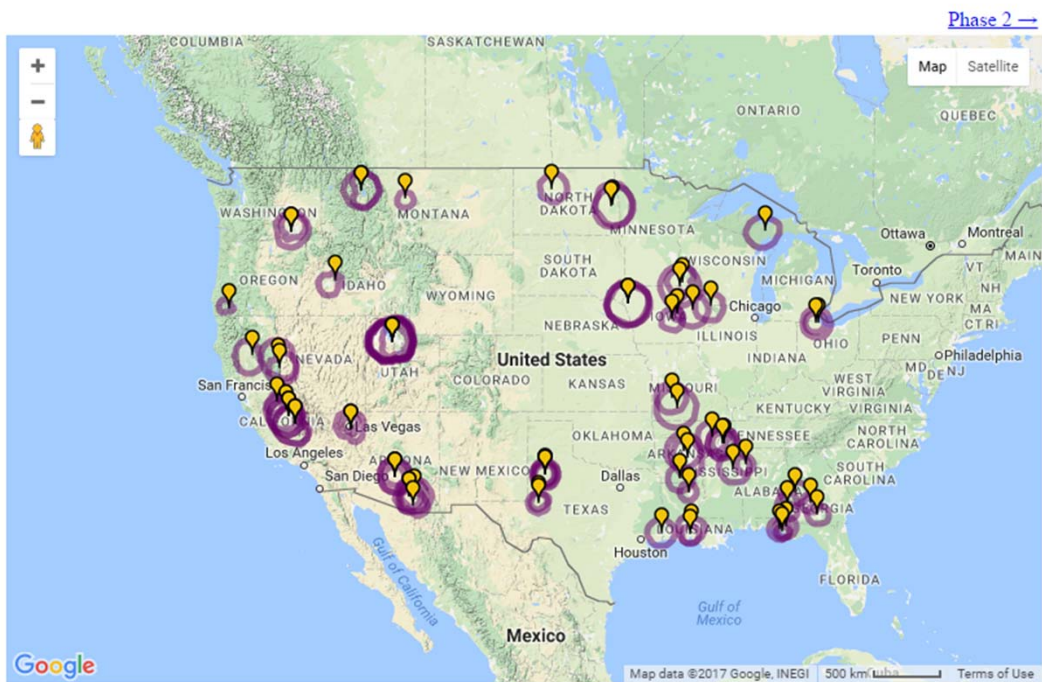


Impact on Translators and LPTV

- **IMPORTANT**
 - 39 month deadline does not apply to TV translators/LPTV
 - Translators/LPTV could be impacted by repack as early as 11/30/2018 (Phase 1 – known areas)

November 30, 2018 Deadline

Map for Phase 1



Source:





Impact on Translators and LPTV

- **IMPORTANT**

- 39 month deadline does not apply to TV translators/LPTV
- Translators/LPTV could be impacted by repack as early as 11/30/2018 (Phase 1 – known areas)
- Translators/LPTV could be impacted by wireless deployment even sooner (areas unknown before hand)

T-Mobile states it “plans to deploy advance LTE services using 600 MHz beginning *this year.*”

(May 9, 2017 filing with FCC)



NAB Petition for Reconsideration

- NAB filed Petition for Reconsideration on March 17, 2017 on FCC Repacking Plan and 39 month deadline
- Petition seeks:
 - More flexibility (Reality) in FCC Repack Plan
 - Media Bureau authority to grant reasonable extensions of time
 - Adjustment of Phase Assignments after repacking cost estimates are received
 - Mitigation of FM station disruption
 - ✓ More proactive management of repack
 - Clarification of international coordination requirements



FCC Announces Regional Coordinators

Federal Communications Commission DA 17-376

APPENDIX A
Regional Coordinators

Regions	Media Bureau Staff Representative	Contact Information
Central Plains	Sonia Greenaway	Sonia.Greenaway@fcc.gov (202) 418-1419
Florida Peninsula	Kenneth Lewis	Kenneth.Lewis@fcc.gov (202) 418-2622
HI/PR/USVI	Nancy Murphy	Nancy.Murphy@fcc.gov (202) 418-1043
Mid-Atlantic	Joyce Bernstein	Joyce.Bernstein@fcc.gov (202) 418-1647
Midwest	Katie Costello	Katie.Costello@fcc.gov (202) 418-2233
Northeast	Raphael Sznajder	Raphael.Sznajder@fcc.gov (202) 418-1648
Northwest	Shawn Maher	Shawn.Maher@fcc.gov (202) 418-2324
Ohio River Valley	David Roberts	David.Roberts@fcc.gov (202) 418-1618
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Southwest	Gary Schorram	Gary.Schorram@fcc.gov (202) 418-1795

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- Regional coordinators “will assist in resolving issues and challenges that stations in the region encounter as a result of the transition.”
- Regional coordinators will “help facilitate cooperation among neighboring stations that may confront similar challenges such as terrain or unique weather events.”
- Complete list of stations each coordinator is responsible for is provided in PN (DA 17-376)



Some Additional Worries

- June 6, 2015 NPRM
 - Amendment of Parts 15, 73 and 74 of the Commission's Rules to Provide for the Preservation of One Vacant Channel in the UHF Television Band for White Space Devices and Wireless Microphones (MB Docket No. 155-146)
 - Requires LPTV and TV translators (and possibly full power TV stations) to ensure that their requests for a new channel or technical modifications do not eliminate unlicensed TV white space channels



A Final Thought

- How do we get this repack done?
 - Broadcasters have strong market incentives to complete repack as quickly and efficiently as possible?
 - Stations eligible for reimbursement want to be paid for incurred costs of changing channels
 - No one wants to reduce service or go dark
 - However, most projects don't go exactly as planned
 - Requires cooperative effort by all parties



Thanks!

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