



AMERICAN TOWER®

AFCCE MEETING

TV Repack Program Update September 20, 2019

Jim Stenberg, Principal RF Broadcast Engineer

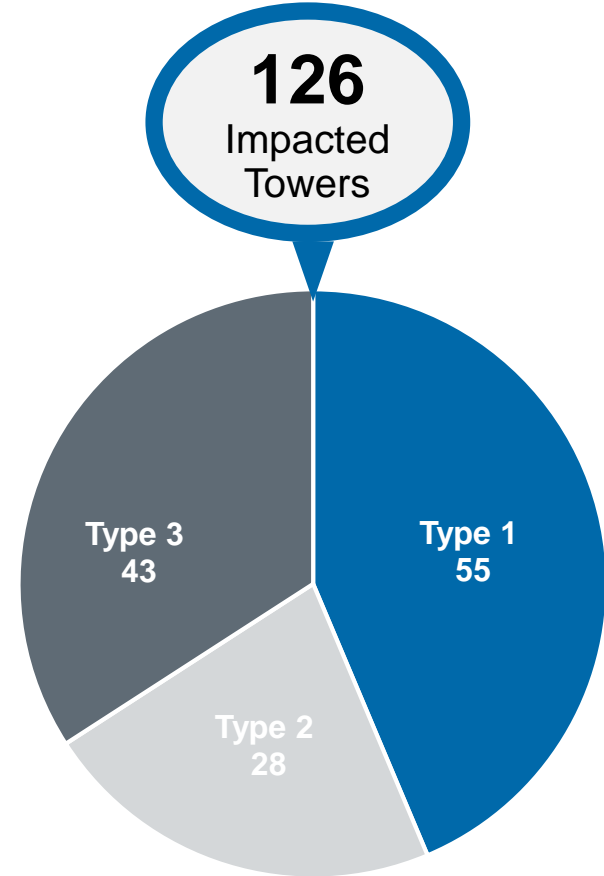
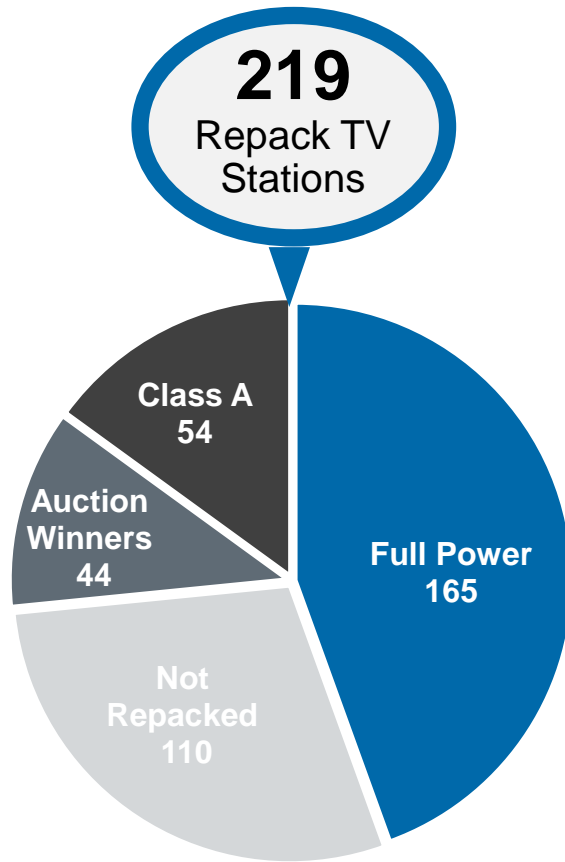
Some times I feel like Lloyd Bridges!

ATC Pre-Repack TV Transmission Facilities

- **380** Full Power and Class A stations operate on owned, managed, & leased sites
- **175** towers with at least one Full power/Class A TV
- **74** towers with 2+ Full Power/Class A TV
- **65** “Complex” sites (Candelabra, Mountaintop, Broadband Antenna)
- **29** owned and operated Broadband UHF antenna systems
- **97** DMAs with towers supporting TV transmission



Incentive Auction and Repack Impact



PROJECT TYPE:

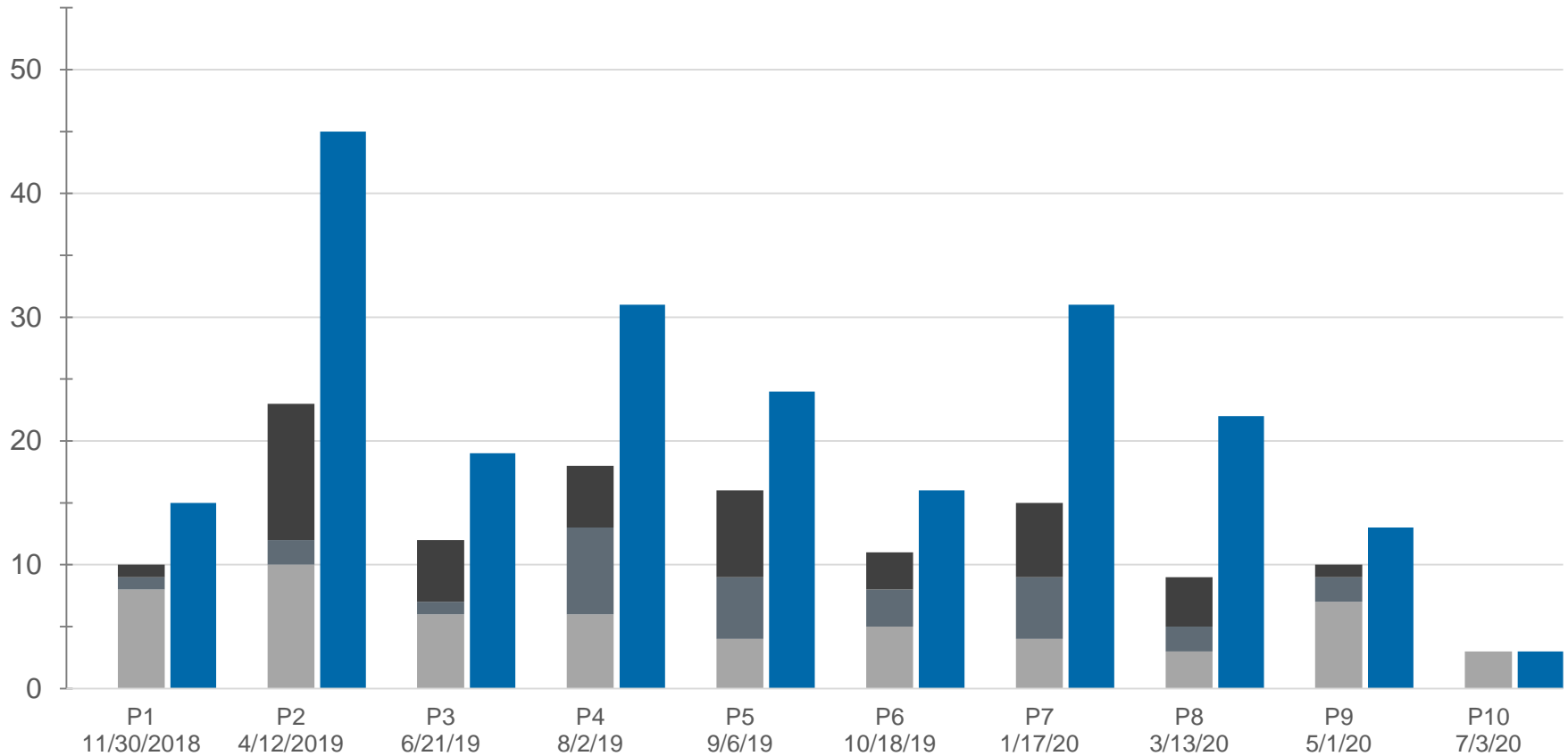
- Type 1 - No tower or site modifications
- Type 2 - Moderate tower and or site modifications
- Type 3 - Complex towers, New BBAs, major tower mods

~20% of all repack stations are on ATC Assets



Tower & Station Statistics

Repack Workload (Towers & Stations) by Phase



*Cutover Dates by Phase

■ Type 1 ■ Type 2 ■ Type 3 ■ Repack Station Count

Almost all ATC Construction was/is in 2019!



ATC – Repack Planning

- › Start planning early
 - › Designs began in 2016
 - › Mappings and baseline analysis to G on all effected towers
- › Set up and staff repack team totaling 31 members
 - › Program manager
 - › Engineering
 - › RF and Structural
 - › Sales
 - › Leasing
 - › Purchasing
 - › Construction managers



ATC – Broadband Antennas

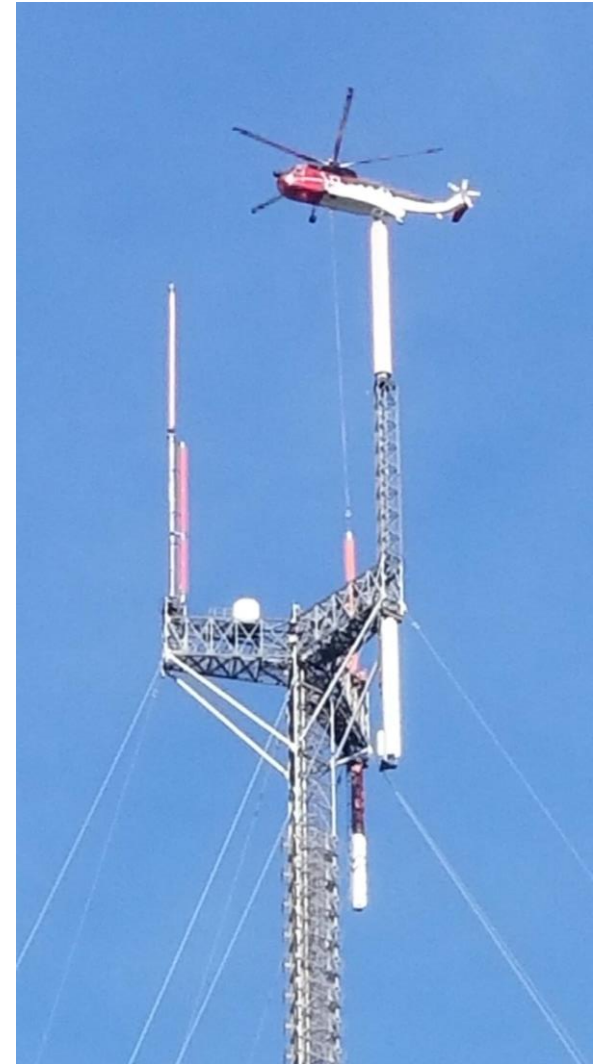
- 15 New Broadband Antenna Systems
 - Designed, purchased, installed, owned and operated by ATC
 - Leverage site diversity for interim operation
 - Provide new technology with ATSC 3.0 upgrade path
 - Dynamic polarization = H pol now and E pol as desired
 - Provide system monitoring

Market	# of Systems
Atlanta	2
Boston	3
Chicago	1
Dallas	1
Detroit	1
Houston	2
Miami	1
Norfolk	2
Oklahoma City	1
Orlando	1



ATC – Single Frequency Antennas

- 144 Single Frequency Antenna Systems
 - Customer designed, purchased, installed and operated
 - Customer hires, schedules and manages antenna/line installation crew
 - ATC manages, contracts and/or performs structural analysis
 - ATC manages tower modifications, overall tower operations, monitors safety and coordinates shutdowns



How Has ATC's Plan Worked Out?

- › In general, extremely well!
 - › 12 BBA system installs completed in a 12 month time frame
 - › 85+ SFA projects completed, many more in process
 - › Almost all completed within time line
 - › Excellent safety record
- › Winter and spring weather caused numerous delays
- › Almost all rigging/install projects have taken longer, cost more and been behind schedule for varied reasons
- › Many antenna installations have been converted to helicopter lifts, some late in the schedule.
 - › Probably will increase as crews get even tighter and further behind.
 - › Helicopters decrease install time but increase the cost
- › Equipment delivery caused some early delays but caught up quickly.
- › Transmitter installations are often behind schedule



Thank You!

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