

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)
)
Catalog of Eligible Expenses and Other Issues) GN Docket No. 12-268
Related to the Reimbursement of Broadcaster)
Channel Reassignment Costs)

**COMMENTS OF
THE NATIONAL ASSOCIATION OF BROADCASTERS**

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The National Association of Broadcasters (“NAB”)¹ submits these comments in response to the Public Notice, released September 23, 2013, seeking comment on issues related to the administration of the Spectrum Act’s TV Broadcaster Relocation Fund (“the Fund”).² The Spectrum Act³ directs the Commission to reimburse broadcast stations reassigned as a result of the post-auction repacking for their reasonably incurred costs.⁴ To that end, the Act requires that \$1.75 billion of the proceeds from the “forward” auction be deposited in the Fund for payment of those reasonable relocation costs (as well as certain relocation costs incurred by multichannel

¹ NAB is a nonprofit trade association that advocates on behalf of local radio and television stations and broadcast networks before Congress, the FCC and other federal agencies, and the courts.

² See *Media Bureau Seeks Comment on Catalog of Eligible Expenses and Other Issues Related to the Reimbursement of Broadcaster Channel Reassignment Costs*, Public Notice, DA 13-1954 (Sept. 23, 2013) (“*Public Notice*”).

³ See *Middle Class Tax Relief and Job Creation Act of 2012*, Pub. L. No. 112-96, 125 Stat. 156 (2012) (“the Spectrum Act” or “the Act”).

⁴ See Spectrum Act § 6403(b)(4)(A).

video programming distributors (“MVPDs”).¹

In the *Public Notice*, the Media Bureau “seeks to develop further the record on these cost issues as well as solicit additional comment on cost mitigation strategies” as set out in the 2012 *Notice of Proposed Rulemaking* in this docket.² NAB submitted comments in response to the Spectrum NPRM³; it now reiterates and builds on certain points in those comments and responds to additional matters raised in the *Public Notice*.

Introduction and Summary

In our comments here, NAB proposes a road map that will meet the Spectrum Act’s goals of ensuring full compensation for non-volunteering broadcasters forced to move in the repacking and preservation of the essential broadcasting services they provide—and will do so in an efficient manner. Specifically, NAB urges the Commission to adopt a repacking and reimbursement process built around the following principles addressed more thoroughly in Section IV below:

First, the Commission should hire an independent, third-party administrator to manage the broadcaster reimbursement program, which should help to guard against fraud, waste, and abuse.

Second, the Commission should develop a set of principles that will guide the determination of “reasonableness” in evaluating costs submitted by broadcasters seeking

¹ See Spectrum Act § 6402 (amending 47 U.S.C. § 309(j)(8)(G)(iii)(I)); *id.* § 6403(d)(2).

² *Public Notice* at 1.

³ See *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Notice of Proposed Rulemaking, 27 FCC Rcd 12357, 124760 (2012) (“Spectrum NPRM”).

reimbursement. NAB and broadcasters stand ready to assist the Commission in developing guidance for determinations of “reasonableness.”

Third, a critical step in controlling the costs of relocation is maximizing the amount of time for broadcasters to prepare for repacking. The Commission can materially assist broadcasters by declaring the forward auction closed at the latest possible date, and by providing the earliest possible notice of channel reassignments.

Fourth, broadcasters should be required to certify their costs, under penalty of forfeiture by the Commission, as being “reasonably necessary to reach the audience in their contour,” so as to further minimize potential fraud, waste, and abuse.

Fifth, NAB again urges the Commission to minimize the *number* of stations that have to be relocated and the size of frequency shifts, so that the \$1.75 billion Broadcaster Relocation Fund is sufficient to make whole all non-volunteering broadcasters subject to repacking.

With regard to station reimbursement procedures, NAB previously proposed—and continues to support—a straightforward approach pursuant to which broadcasters submit their invoices for reassignment-related expenses along with a certification that the incurred expenses are “reasonable.”⁴ As long as the submitted expenses were reasonably incurred, the Commission should approve the expenses and provide reimbursement from the Fund. Such an approach would satisfy the mandates of the Act and give non-volunteering stations the flexibility they need to respond to the real-world complexities of channel reassignment and the other consequences of repacking. Rather than adopt a strict schedule of reimbursable costs that cannot account for variation in each station’s unique circumstances, or for factors beyond broadcasters’ control,

⁴ NAB Comments, GN Docket No. 12-268 (Jan. 25, 2013), at 49-59 (“NAB Spectrum Comments”).

NAB urges the Commission to adopt the more flexible reimbursement procedure described in these comments. We also identify, in Section I and Attachment A below, additional, specific categories of expenses (including expenses for interim facilities) that should be considered “reasonable” and included in any illustrative list of expenses eligible for reimbursement.

NAB believes that its proposed reimbursement principles and procedures will assist in administering the TV Broadcaster Relocation Fund as efficiently and wisely as possible, and in accordance with the terms of the Spectrum Act. As NAB explained in its opening comments in the incentive auction proceeding, the Fund must be administered in keeping with the dual statutory mandates that (1) broadcasters electing not to participate in the spectrum auction are to be held harmless for costs reasonably related to repacking and channel reassignment,⁵ and (2) service to the same coverage areas and populations of viewers is to be preserved to the greatest extent possible following repacking.⁶ In practical terms, these mandates require that broadcasters be compensated for *all reasonable* repacking-related expenses that enable them to continue serving essentially the same viewers and the same coverage area they served prior to the auction and repacking. In deciding how to administer the Fund and respond to broadcaster reimbursement requests, the Commission must remain focused on making whole those stations that choose to continue serving the public interest by providing local broadcast television service. We remain committed to assisting the Commission towards that end throughout the spectrum

⁵ Spectrum Act § 6403(b)(4)(a)(i); NAB Spectrum Comments, at 5, 18-21, 49.

⁶ The Act directs the Commission to make “all reasonable efforts” to preserve after repacking the same coverage areas and populations currently served by non-volunteering stations. *See* Spectrum Act § 6403(b)(2). *See also* NAB Reply Comments, GN Docket No. 12-268 (March 12, 2013), at 47-52 (urging the Commission to make all reasonable efforts to preserve populations served by full-power stations, including through translators).

auction, repacking, and reimbursement processes.

Although the efficiency goals expressed in the *Public Notice* are laudable, the issues raised and solutions proposed in the *Public Notice* share a common weakness: broadcaster costs related to channel reassignment and the other consequences of repacking simply cannot be generalized or standardized. In virtually every instance, numerous variables will affect the repacking costs for each station whose channel is reassigned. The Commission must recognize that every station's needs, costs, and circumstances in the repacking will be different—there is no normalized bell curve of standard transmission facilities.

The universe of television transmission facilities is populated by customized, unique transmission architecture featuring a wide range of station-specific features that are a function of channel number, geography, tower site location and design, tower load limitations, weather and climate, number of tower users, tower crew availability, spectrum congestion, location of population centers within a market, and other factors. There are only a few, simple circumstances involving a single-use tower, flat geography, and a market with a concentrated population center and few channels in use. Many stations' circumstances are far more complicated, and some are exceedingly complex—such as the broadcast sites at the Empire State Building in New York, the Willis Tower in Chicago, and, as described in detail in these comments, the Sutro Tower in San Francisco. It follows that a “cookie-cutter” approach to reimbursement is not practical and will not lead either to the reasonable and efficient administration of the Fund or to full and fair compensation for broadcast stations electing to remain on the air.

Because the services and equipment needed by individual stations for repacking are neither uniform nor generic, discounts and bulk purchasing are not practical options for

mitigating the cost of broadcaster relocation. The Commission can better help control costs by timing the closing of the forward auction so as to afford broadcasters the maximum amount of time possible to prepare for repacking, and by giving broadcasters the earliest possible notice of their channel reassignments. The tighter the timetable for completing repacking and relocation, the higher station expenses are likely to be. NAB urges the Commission to take all actions within its power to help broadcasters effectively manage their repacking costs.

I. The Development of an Illustrative List of Eligible Expenses Would be Useful to Broadcasters and to the Commission

A. The Proposed “Catalog” of Eligible Expenses Is Incomplete

The *Public Notice* invites comment on “a preliminary Catalog of Eligible Expenses” (the “Catalog”) developed by the Commission with the aid of third-party contractor Widelity, Inc. This Catalog is intended to identify “categories and descriptions of expenses that . . . broadcasters and MVPDs are most likely to incur as a result of broadcaster channel reassignments.”⁷

NAB agrees that an illustrative, non-exhaustive list of eligible expenses should be developed to guide the administration of the Fund and to educate the Commission and broadcasters with respect to the types of expenses most likely to be incurred. In fact, in response to the Spectrum NPRM, NAB submitted such an illustrative, non-exhaustive list of items that ought to be eligible for reimbursement, and that list is resubmitted herewith as Attachment A.⁸

⁷ *Public Notice* at 2.

⁸ See NAB Spectrum Comments at 55 & Attachment A (proposing a non-exhaustive “list of ‘hard’ and ‘soft’ costs that should be eligible for reimbursement” from the Fund, but noting there may be unlisted expenses that nevertheless are “justifiable expense[s] that should be eligible for reimbursement”). In response to the Spectrum NPRM, other commenters also

The Catalog attached to the *Public Notice* represents a step in the right direction, but it is incomplete. It focuses too heavily on certain capital assets to the relative exclusion of significant “soft” costs associated with repacking. At a minimum, the Catalog should be revised to include all of the categories of items and services appearing in NAB’s list that were omitted from the Catalog.

The Catalog proposed in the *Public Notice*, for instance, does not adequately address back-up facilities.⁹ It does not acknowledge that new RF exposure studies will be necessary where the RF environment at a tower site changes, which it almost certainly will at numerous locations.

In addition, the Catalog appears to assume that many stations will be able to use existing towers after the repacking.¹⁰ That assumption cannot be applied uniformly, however, in light of, among other things, Revision G of the ANSI/TIA-222 standard, which established new, more stringent structural integrity requirements for towers. Before any repacking-related

submitted proposed lists of equipment, services, and other expenses related to the digital television (“DTV”) transition that the Commission should consider reasonable and illustrative. *See, e.g.*, Comments of ABC Television Affiliates Association, CBS Television Network Affiliates Association, FBC Television Affiliates Association, and NBC Television Affiliates, GN Docket No. 12-268 (“Affiliates Spectrum Comments”), at 47 & Appendix A (compiling data reflecting stations’ actual equipment and service costs incurred in the DTV transition as illustrative of costs likely to be incurred as a result of repacking).

⁹ As NAB explained previously, the Commission should reimburse repacked stations for retuning or replacement of authorized auxiliary facilities, which “are used during periods of routine maintenance on [a station’s] principal licensed facilities or in the event of unexpected failure of the principal licensed facilities,” as well as for the expenses associated with temporary facilities necessitated by the repacking process itself. NAB Spectrum Comments at 56.

¹⁰ *Cf. Public Notice*, Attachment: Catalog of Eligible Expenses at 8 (acknowledging that, “[i]f replacement or addition of antennas is required, it may be necessary to modify the existing tower or construct a new tower”).

modifications can be made to certain older towers (such as, for example, the tall tower used by WSAV-TV, Savannah, Georgia), those towers likely will need to be upgraded to comply with the 222-G requirements. Older towers are likely to require significant structural modifications before a station will be able to install even a new interim antenna on the tower; a few may need to be replaced altogether.

Even newer towers that complied with ANSI/TIA-222-G when they were constructed during the DTV transition were generally designed to hold only a specific load. Adding interim antennas to these newer towers thus may result in violation of the structural integrity requirements of ANSI/TIA-222-G. The fact is numerous towers—both older and newer—will require some degree of structural modification to accommodate the many changes necessitated by repacking. That estimate is borne out by stations' experiences in the DTV transition.¹¹

Existing towers may not be capable of holding new post-repacking antennas without reinforcement due to a basic fact of broadcast engineering: lower-frequency antennas generally are larger and weigh more than the higher channel antennas they will replace and, as such, add additional weight to, and create a higher wind load for, the support structure. The significant modification or replacement of a tower is no small matter. Indeed, NAB expects tower modifications to be more complicated and time-consuming than the installation of new antennas themselves—and stations faced with this prospect frequently confront, among other things, complex local zoning and inspection issues that can lead to additional delays and unanticipated,

¹¹ One group operator with 12 stations, for instance, was required either to reinforce its existing towers or rebuild them altogether in all but one case to accommodate the new DTV loads.

but eminently reasonable, costs.¹²

The recent experience of KPLO-TV in Reliance, South Dakota, illustrates some of the complexities and delays surrounding tower replacement. KPLO-TV's tower collapsed in an ice storm in January 2010. KPLO-TV owned the tower and the land upon which it stood, and no other television stations transmitted from the tower. Because the tower was located in a culturally sensitive area—Medicine Butte—the licensee determined, after consultation with local stakeholders, that it was more appropriate to move than to stay. Despite the licensee's diligence, it took many months to find a new site, complete the Section 106 environmental and cultural process, and secure permits, easements, and FAA and Commission permission to construct the new tower.¹³ The station considered multiple potential sites before settling on the final one; various limitations, including constrained service area and lack of appropriate electrical facilities, made other sites unsuitable. Now, nearly four years later, the new tower's construction is nearly complete. Taking into account the unique issues present at the tower site, it was entirely

¹² See NAB Spectrum Comments at 56 (noting added delays and expenses likely to be associated with tower modification or construction, including land acquisition, contractual liability to landlords or other site users, and local zoning processes). WJAR-TV, Providence, Rhode Island, illustrates the complexity and potential impact of local zoning issues. WJAR's tower is located in a small neighborhood where post-repacking activities will be limited by the need to avoid disruption to neighboring landowners. If repacking necessitates modifications to the tower, the station is likely to face zoning issues as well as other complications unique to its tower location (including coordination with the Federal Aviation Administration because the station uses one of two towers that are situated close together but only one of which is lit). On that point, the Commission should bear in mind that modifications to existing towers in the repacking might require strobe lights to be re-rigged, and if antenna lights are reduced, changes likely will require FAA oversight and approval.

¹³ Because the new tower is located in a zone through which certain migratory birds sometimes pass, the new tower's construction includes, at the recommendation of environmental experts, bird flight diverters, which added to the cost of the new facility.

reasonable under the circumstances for KPLO-TV to move its location, and its experience demonstrates the lengthy, complex and costly nature of tower replacement.

Significantly, the Catalog fails to mention expenses incurred by broadcasters that are not being repacked but are nevertheless affected by the repacking of others. As NAB previously explained, such costs incurred as a result of repacking should be considered reasonable and eligible for reimbursement.¹⁴

Other “missing” categories include:

Transmission-related expenses

- * Filters other than mask filters
- * New wave guide
- * Temporary transmission line
- * Temporary electrical power
- * New controllers and other equipment associated with above when existing equipment is not compatible with new equipment
- * Equipment to change translator input channels
- * Disposal of temporary equipment

Tower and other facilities-related expenses

- * Land (for new tower or new facility)
- * Contractual liability to current tower landlord if new tower is necessary
- * Contractual liability to other site users when they are directly impacted (e.g., service interruptions, temporary facilities, shared antenna)
- * Difference in tower rent
- * New STL and ICR to new site
- * Moving costs to haul equipment to new site
- * Removal and disposal of waste
- * Legal and expert fees (for real estate (acquisition or leasehold); for tax advice on how new/replacement equipment is taxed)
- * FCC filing fees for construction permits and new licenses (if not waived by FCC)

¹⁴ See NAB Spectrum Comments at 57-58.

Ancillary expenses necessitated by repacking process

- * Microwave, fiber, or other delivery expenses to ensure delivery to cable headends or satellite local receive facilities that are reached by existing facilities but are not by new facilities or that are necessary on a temporary basis to bridge any gap in full power operations (e.g., extended periods of silence)
- * Replacement of wireless microphones, interruptible foldback (IFB), and headsets that are displaced from now unused TV channels
- * Additional or “bridge” insurance
- * Tax consequences (e.g., depreciation schedules rendered inaccurate)
- * Internal labor costs (e.g., personnel time spent on modifications and accounting/cost reconciliation, etc.)
- * Potential overtime related to upgrading and replacing equipment in an unusually compressed time frame.¹⁵

Although NAB generally supports the Commission’s efforts to identify categories of expenses that should be reimbursed from the Fund, it reiterates that no “Catalog” can possibly be exhaustive in scope or function as a “catalog” as that term is commonly understood. The Commission should make clear that its “Catalog” of reimbursable expenses represents illustrative expenses likely to be the most commonly incurred and predictable, but that less common, unique, and unforeseeable circumstances will generate un-catalogued expenses that are no less reasonable and should qualify for reimbursement.

B. Expenses for Interim Facilities Are *Prima Facie* Reasonable and Should Be Eligible for Reimbursement

The Catalog, like the non-exhaustive list submitted by NAB in response to the Spectrum NPRM, identifies “interim facilities” as appropriate elements for reimbursement from the

¹⁵ The Act expressly prohibits reimbursement for a station’s “lost revenues,” *see* Spectrum Act § 6403(b)(4)(C), so a broadcaster’s efforts and expenses incurred to minimize time off the air and associated losses of revenue should be deemed reasonable under the Act.

Fund.¹⁶ Accordingly, the *Public Notice* invites comment “on ways in which broadcasters can incorporate interim equipment into their permanent facilities, thus saving the expense of potentially purchasing the same equipment twice.”¹⁷ NAB agrees that back-up or interim equipment will be useful if not essential to broadcasters’ continued operations during the post-auction relocation process and should be reimbursable to the extent that a station’s use of such equipment is reasonable.

WXYZ-TV, Detroit, Michigan, provides a good illustration. WXYZ currently broadcasts on Channel 41; its facilities include both primary and auxiliary antennas and primary and auxiliary transmitters (as do most other television stations located at the same site as WXYZ). The station relies on its auxiliary equipment frequently. If WXYZ is assigned to a new channel following the auction and repacking (as it very likely will be), the station will need to replace both its auxiliary and permanent equipment, and it almost surely will rely on the auxiliary equipment as an interim facility to minimize its time off the air during the transition. That process will entail several carefully coordinated steps, which generally will include (1) taking down the station’s current, auxiliary side-mounted Channel 41 antenna, and removing both the station’s current auxiliary transmission line from the tower and the auxiliary transmitter from the transmitter building; (2) installing a new auxiliary transmission line, a new auxiliary antenna,

¹⁶ See *Public Notice*, Attachment: Catalog of Eligible Expenses at 9 (acknowledging that, “[t]o avoid prolonged periods off the air while repacking changes are made, stations may need to use interim facilities” and noting that some stations “may need to purchase or rent equipment or facilities” to “permit continued operation during construction of the post-auction facility”); NAB Spectrum Comments, Appendix A (identifying various categories of “temporary” equipment necessitated by channel reassignment). As noted above, however, the Catalog fails to include all relevant expenses relating to interim facilities.

¹⁷ *Public Notice* at 3.

and a new auxiliary transmitter for the station's newly-assigned channel; (3) switching the station's operations to the new auxiliary facilities; (4) taking down the station's current primary Channel 41 antenna and transmission line and removing its transmitter; (5) installing a new, permanent antenna, transmission line, and transmitter for the station's newly-assigned channel; (6) switching the station's broadcast operations from the new interim equipment to the new permanent equipment; and (7) maintaining the new "interim" equipment as the station's back-up, licensed auxiliary system.¹⁸ The process is likely to require several weeks to complete (assuming that the job will be undertaken by one tower crew capable of servicing WXYZ's 1100-foot tower) and may well be complicated or delayed by real-world constraints including weather in Detroit (assuming, of course, international coordination is already complete).

As WXYZ's situation illustrates, interim equipment will be critical to broadcasters, not only to ensure that the channel reassignment process can be managed effectively but also to make broadcasters whole by ensuring their ability to stay on the air and serve their communities during the repacking period. For all these reasons, "reasonable" costs of replacing both back-up and permanent equipment should be fully reimbursed under the Act.

NAB also recognizes the underlying point of the Notice that the Commission wants to encourage stations to avoid double expenditures on interim and permanent facilities. The necessity for or usefulness of interim equipment and its incorporation into stations' permanent facilities after the repacking, however, will depend upon each broadcaster's unique situation.

¹⁸ The station's current primary and auxiliary transmitters likely will not be able to be re-tuned to the station's new channel assignment, given both the age of the auxiliary transmitter (which was installed in or around 1997) and the anticipated significant change in the station's channel assignment.

There is no one-size-fits-all cost scheduling. And, it may not be assumed that interim equipment can be incorporated into permanent facilities. As the DTV transition showed, interim equipment is almost always smaller in scale and capacity than permanent equipment; in some cases, it may not be feasible to transition interim equipment to permanent use. In those circumstances where long-term use is feasible and sensible, broadcasters can and should use the equipment in their permanent post-repacking facilities; reimbursement, however, should not be conditioned on such long-term use where the interim equipment otherwise satisfies the “reasonableness” standard for reimbursement.

II. The Cost-Saving Proposals in the *Public Notice* Are Well-Meaning but Impractical

The *Public Notice* invites comment on whether certain “cost-saving” measures such as bulk purchasing and competitive bidding can and should be mandated in connection with the administration of the Fund. NAB understands why the Commission wishes to examine these and other measures, and agrees with the general notion that reimbursable costs should be no higher than necessary to fully compensate broadcasters that are repacked following the spectrum auction. Unfortunately, the approaches proposed in the *Public Notice* seem to assume that all or at least many of the stations affected by repacking and entitled to reimbursement from the Fund will undergo similar if not identical changes. As noted above, that premise is incorrect. In nearly all cases, attempts to “standardize” costs or coordinate group purchases or bulk discounts are not practical options.

The *Public Notice* specifically seeks comment on “the prices associated with the hard and soft costs included in the Catalog,” including whether “broadcasters typically pay list price for

equipment” or instead obtain discounts for “bulk orders or for station group owners.”¹⁹ The short answer (explained in detail below) is that this conception of the question presents a false choice, as there is no “list price” for built-to-order, non-mass produced television transmission equipment.

The *Public Notice* more presciently asks whether the “services and equipment necessary to accomplish a channel reassignment” are “too customized to be eligible for discounts or bulk purchasing.”²⁰ As discussed below, the answer to that question is a resounding “yes.”

A. The Services and Built-to-Order Equipment Needed for Broadcaster Relocation Do Not Have “List Prices” and Are Too Customized to be Eligible for Discounts or Bulk Purchasing

1. Services and Equipment Purchased by Individual Stations Are Neither Uniform Nor Generic

Broadcasters do not buy generic or “blank” antenna and transmitting equipment “off the shelf”; manufacturers and vendors do not maintain warehouses of pre-fabricated antennas and transmitters. Instead, these purchases are customized to a station’s specific needs, taking into account service area, transmitter site, local geography, adjacent and co-channel configurations, and budget.²¹ Accordingly, it is inaccurate to describe the price a station pays as either a “list” price or a “discounted” price; it is simply the price appropriate for the customized

¹⁹ *Public Notice* at 2.

²⁰ *Public Notice* at 2.

²¹ Even station groups that seek to achieve equipment uniformity, and therefore efficiencies and costs savings across the group, do not have uniform antennas and transmitting equipment. For example, one NAB-member station group that highly values station-group uniformity—in as many aspects of operation, processes, equipment, and vendor relationships as possible—has indicated that no two of its dozen station transmission facilities are exactly alike; each has unique needs and correspondingly customized equipment.

piece or configuration of equipment a station requires. Even where equipment is or can be considered standardized, it would be misleading to suggest that stations pay a “catalog” price. Individual pieces even of otherwise “standard” equipment—and therefore prices—are virtually always fine-tuned to fit an individual station’s needs and preferences.

To illustrate the point, consider a hypothetical station that requires new transmission equipment because it has been reassigned from channel 45 to channel 28. There is no Dielectric catalog to which one can turn and say “I want that channel 28 antenna,” just like one cannot call a general contractor and ask for the price of “a new house.” Antennas are not generic, not even with respect to a single channel. The customization process for an antenna and entire transmission system is not the same as choosing the make and model of a car and asking for a particular color, heated seats, and floor mats—it’s more like choosing the make and model of a car and having the engine modified from 6 cylinders to 12, adding multiple gear ratios for reverse, modifying a passenger door to accommodate disabled access, moving and resizing the gas tank, and adding two wheels to accommodate the new load.

Moreover, in markets where a large number of stations will be packed into a smaller swath of spectrum post-auction, the transmission systems, and especially new antennas and mask filters, needed by the repacked stations will be even more customized. The more stations that are packed into a smaller number of channels, the more specialized (and, in turn, expensive) each antenna must be to avoid creating or suffering from interference, especially with respect to co-channel and adjacent channel operations from within the same market or adjoining markets, while simultaneously serving the same population and coverage area as before. In short, the number of variables that can influence the price of a new antenna, no less than the price of a new house, foreclose the notion that a generic “cost schedule” can be developed to guide or limit

reimbursement from the Fund.

Even something like transmission line varies dramatically from station to station, depending on channel number, number of antennas served by the line, tower load capacity, and nature of mounting needs on the tower. Transmission line is not fungible, like RG-6 coax cable; most transmission line is tuned and manufactured for precise requirements determined by the circumstances in which it will be used.

The Commission should also bear in mind that the number of qualified antenna manufacturers is limited. It is unclear whether the capacity to manufacture the number of new antennas necessitated by repacking within the compressed timetable established by the Act even exists.²² Given that it normally takes a manufacturer approximately 120-180 days to complete a new antenna order, assumptions about “ordinary” costs for new antennas simply cannot be extrapolated to determine antenna prices in the limited post-repacking period.

Costs—and the timetable, which directly affects costs—related to the installation of new equipment are equally difficult to generalize or predict in advance. Here, too, numerous variables come into play. A station’s geographic location, the condition of access roads, the size and nature of space at the tower site, the number of co-located facilities, and other factors will influence a station’s installation costs. Although NAB, like other commenters, has pointed out the limitations sure to be imposed on the repacking process by climate, weather, and geography (among other considerations), the point bears further emphasis in light of the obvious costs and

²² Today, virtually all television antennas are manufactured by one of three qualified companies in the United States—Electronics Research, Inc., Dielectric, and Jampro Antennas, Inc. In addition, a fourth manufacturer exists in Australia. NAB estimates that Dielectric manufactured well more than half of the antennas needed for the DTV transition, obviously in a far longer time frame.

delays associated with weather- and geography-related complexities.

To the extent that generalizations can be made, individual broadcasters' relationships with vendors are more significant factors in pricing accommodations than quantity or bulk orders. Long-standing relationships between individual stations and particular vendors can result in cost savings, but negotiated discounts are based on a variety of factors, including the station-vendor relationship, the size of the order, the expectation or history of an ongoing relationship or multiple orders, the complexity of the station's system, the timetable for delivery and installation, and other considerations. Stations' relationships with preferred vendors also produce other, less readily quantifiable benefits to stations, including reliability in service and maintenance.

2. Stations' Unique Needs and Circumstances Illustrate the Difficulty in Attempting to "Generalize" Repacking Costs

Mount Pisgah, the transmitter site for WLOS-TV and one of WUNF-TV's DTV facilities in Asheville, North Carolina, provides a good example. The site is located on U.S. Forest Service land. Even in optimal conditions, the tower site is difficult to access: It is a mountain-top site with no road access to either the tower, located at the mountain's summit, or the transmitter building about 150 feet below the summit. A cable-drawn railroad up the side of the mountain provides the only access to the site. Because the Mount Pisgah tower is heavily loaded, the tower needed structural modifications before installing the stations' post-DTV transition antennas, and site limitations necessitated use of a helicopter to install WLOS-TV's antenna on the tower.²³ In addition, work on the WUNF-TV antenna required coordination with

²³ Even the cost of a helicopter, where one is necessary to the installation of

the U.S. Forest Service, which had to close the hiking trail from the Blue Ridge Parkway to the top of the mountain since the trail ends at the base of the tower, creating obvious safety issues. Television stations on Rib Mountain in Wisconsin (WAOW, WSAW-TV, and WHRM-TV) faced similar, but not identical, obstacles. That site is inaccessible for more than half the year, and the antenna configuration requires helicopter installation. Costs associated with any post-repacking changes at these and other similar sites obviously will be influenced by a variety of factors unique to each site and are not “catalogue-able” or generalizable across other stations.

As a general rule, multi-user sites with heavily loaded towers will pose significant, unique challenges. The WCTI tower near Trenton, North Carolina, provides a good example. The transmitter facilities for WCTI-TV, WYDO-TV, and WUNM-TV are all located on the 2000-foot tower. The tower is already heavily loaded and can probably support only one additional light-weight, interim antenna with a small transmission line on a temporary basis. To prevent overloading of the tower, WCTI and WYDO already share a transmission line that feeds their separate antennas. If two (let alone all three) of the stations currently sharing the tower are required to change channels as a result of the repacking, it would be nearly impossible to make the transition without at least one of the stations going off the air for several days, because the tower lacks the capacity to hold more than one temporary antenna.²⁴

post-repacking equipment, cannot be accurately generalized; costs will vary dramatically by, among other things, geographic location, terrain, and distance from air terminal facilities.

²⁴ This example also highlights the need to make reimbursement available even to those full power and Class A (and radio) stations that are not reassigned but are directly or indirectly affected by repacking, such as when a partner station with whom the non-repacked station shares an antenna and/or transmission line is forced to change channels or when a shared tower is affected by the repacking process. *See* NAB Spectrum Comments at 57-58; *see also* Affiliates Spectrum Comments at 52-53.

Furthermore, the logistics of undertaking two (or three) antenna projects on the same tower at the same time are formidable. With multiple separate licensees involved, it may not be practical to use the same tower crew. Two tower crews generally will not work on a single tower at the same time; among other issues, they normally refuse to use another crew's rigging due to liability concerns.²⁵ Owner preferences and organizational purchasing requirements further complicate matters. In light of these issues, simultaneous channel moves on that tower will be difficult if not impossible. This scenario—involving a multi-station tower with individual antennas—is extraordinarily challenging but, perhaps more significantly, will likely be faced many times in the repacking process.²⁶

Multi-user towers also will present special challenges in the repacking process where antennas are stacked on top of one another. Consider the 2000-foot tower located in Auburn, North Carolina, hosting a three-pronged candelabra antenna structure. On one prong, an abandoned Channel 55 antenna sits atop WNCN-TV's active Channel 17 antenna. On a second prong, WLFL-TV's abandoned Channel 57 antenna sits atop WRDC-TV's active Channel 27 antenna. And on the third prong, WRAL-TV's active Channel 48 antenna sits atop WRAZ-TV's

²⁵ A community antenna would not be a viable solution. WCTI currently operates on non-directional channel 12 high-band VHF. WUNM is directional channel 18 UHF, and WYDO is directional (with a significantly different pattern from WUNM) channel 47. Changing the antenna patterns for either WYDO or WUNM would result in a significant change in the area served, contrary to the express mandates of the Spectrum Act.

²⁶ In multi-user tower situations, it may not be possible to install the interim equipment necessary to facilitate relocation of one or more stations. For example, WCMH-TV, Columbus, Ohio, which leases tower space from WBNS-TV, might not be able to install temporary facilities on its current tower; structural evaluation will be necessary to determine whether the tower will be able to support the required interim equipment. WRBL-TV, Columbus, Georgia, faces this issue as well.

active Channel 49 antenna. On each prong, the bottom antenna supports the top. On this tower (and others in a similar configuration), if both bottom and top antennas are active but only the bottom, not the top, antenna is repacked, both antennas have to be removed to accomplish the relocation.²⁷ On the prongs where abandoned antennas sit atop active antennas, if stations using the bottom antennas are repacked, the abandoned antennas will need to be removed to modify or replace the active antennas beneath them.²⁸

The television stations with antennas on the Willis Tower (f/k/a the Sears Tower) in Chicago face even more complex circumstances.²⁹ There are numerous radio and television antennas on the tower's east and west masts.³⁰ Television channels broadcasting from the Willis Tower include, among others, 36, 43, 45, 47, 48, 50, and 51, many of which also have auxiliary facilities at the same location. The mere staging of materials for post-repacking relocation activities of some or all of these stations will be extraordinarily difficult; it will be impossible, for example, to bring up to the top of the tower simultaneously the new equipment needed by the several repacked stations requiring new antennas (let alone new interim facilities). Staging will

²⁷ This situation, too, illustrates one of many circumstances where a non-repacked station might nevertheless incur “reasonable” repacking-related expenses that should be reimbursable from the Fund.

²⁸ The above three illustrative examples—from Mount Pisgah, Trenton, and Auburn—are all from one state, North Carolina. Similar situations abound in state after state.

²⁹ According to its own website, the Willis Tower is “one of the most dense and complex broadcast transmission facilities in the world.” *See* <<http://www.willistower.com/building-information/broadcast/>>. A photo at the Willis Tower website illustrates that this is yet another tower site requiring the use of a helicopter for antenna installation. *See id.*

³⁰ *See* “Willis Tower,” Wikipedia, *available at* <http://en.wikipedia.org/wiki/Willis_Tower>, § 11.2 (Television Stations).

be a complicating factor at many challenging sites. And those added complexities will create delays—and thus will increase costs.³¹

Weather, of course, will be a significant factor in certain stations' ability to undertake necessary post-auction modifications to their facilities; those limitations give rise to unpredictable variations in cost. For example, three television stations in Wausau, Wisconsin, operate from a tower that is accessible, on average, less than five months every year³²; during the rest of the year, weather and wind conditions make work on the tower too dangerous. The ability to modify these facilities will be both limited in time and subject to unpredictable cost variations. WVVA-TV, Bluefield, West Virginia, faces similar issues that will limit tower access. Winter weather impedes the ability of large trucks to access the station's mountain site for several months, and melting snow then makes access roads impassibly muddy for a freight vehicle carrying a 12-ton antenna.

Finally, the Sutro Tower site in San Francisco presents many of the variables, complexities, and limitations that both prevent generalizations about repacking equipment and costs and illustrate the need for sensitivity to the serious timing issues posed by the Act. To

³¹ Delay—and associated expense—also can result from a single station in a market that is not ready to transition even when all of the other stations in the market are fully prepared.

³² Transmission facilities for numerous television stations around the country experience site access difficulties during cold weather months. Comments filed in this proceeding have pointed out the access challenges that five co-located television stations (WETK, WFFF-TV, WVNY, WCAX-TV, and WPTZ) have in Vermont, *see* Reply Comments of Mt. Mansfield Television, Inc., Vermont Public Television, Nexstar Broadcasting, Inc., and Mission Broadcasting, Inc., GN Docket No. 12-268 (Mar. 12, 2013), at 3 (“Given the weather conditions on Mt. Mansfield, construction can only be undertaken between June and October when the road to the site is open; during the rest of the year, access to the site is only by snowmobile.”). Such issues are not unique to that location—the tower sites for KIDK, Idaho Falls, Idaho (unsurprisingly) and KBAK-TV, Bakersfield, California (perhaps surprisingly) are similarly accessible only by snowmobile during cold weather months.

begin with, the Sutro Tower situation underscores the special technical challenges that stations in crowded markets will face in the repacking. At present, the eleven Sutro Tower antennas include stations occupying channels 7, 19, 29, 30, 33, 34, 38, 39, 43, 44, and 45; stations occupying channels 14 and 32 are attempting to add antennas to the tower. In addition to the eleven stations currently occupying the Tower, eleven other stations operate in the San Francisco market, which is adjacent to the Sacramento market to the east and the Salinas/Monterey market to the south. Finding full-service replacement channels for the stations that elect not to volunteer in these three adjoining markets will be challenging and will necessitate sharing the available channels among the three markets. In light of that necessity, many Sutro Tower stations will need to consider new directional patterns to avoid interference between markets.³³ Those changes might require replacement or reconfiguration of all of the active UHF antennas (as well as any VHF antennas that would be contemplated).

In addition, if it becomes necessary to have adjacent channels within the market—a greater likelihood as stations are packed into a smaller swath of spectrum—it may be desirable to co-locate the adjacent channel facilities.³⁴ Thus, additional San Francisco Bay Area stations may find it necessary to relocate to Sutro Tower to allow adjacent channel operation, further complicating tower structure, antenna placement, and space needs for transmitters.

For existing Sutro Tower stations, the best-case relocation scenario would allow the two current UHF master antennas to be re-used; both are wide-band, custom directional antennas that

³³ Doing so, however, could impact the stations' ability to serve their same population and coverage area.

³⁴ Reducing the overall number of channels available in a market obviously increases the likelihood of adjacent channels and the related preference for co-location.

are contoured to the service area designed for operation from Channels 14 to 51. If the same pattern could be re-used by relocating stations, replacement of the antennas would not be necessary. The branch combiners, however, must be changed to accommodate channel changes, and if custom directional patterns are required by reassignment, it might become necessary to replace the current master antennas with several individual antennas—a contingency that would require a new structural design for two of the three 215-foot support towers atop the Sutro Tower's 762-foot, three-legged tripod support structure.

The best case for Sutro Tower stations voluntarily assigned to new VHF channels would require a complete replacement of the third 215-foot support tower with a new steel lattice support. At least two new broadband VHF antennas would be required to accommodate stations moving to VHF. Here too, if custom directional patterns are required by reassignment, there may not be sufficient space on the third support tower, which, in turn, would necessitate the replacement of antennas on the other two support towers. The impact of these many, complex changes could require extensive structural upgrades to the main tower structure to support new or modified loads.

In addition, all current Sutro Tower stations have standby antenna facilities. Depending on the final mix of VHF and UHF channels on the tower after repacking, those standby antennas might need to be upgraded with new combiners and, in the case of VHF, new wide-band designs. The existing VHF standby antenna is low on the tower; it would need to be moved higher on the tower if multiple VHF channels were assigned at Sutro Tower to avoid increasing levels of RF radiation in the neighborhood—all of which would require further structural modifications to the tower.

Sutro Tower stations also face potentially complex and time-consuming zoning and

related issues that many other relocated stations will confront in repacking if changes to the configuration of a tower are necessary. Sutro Tower operates under a conditional use permit issued by the City and County of San Francisco. Any modification of the tower or replacement of an existing antenna, other than replacement of precisely the same make and model, requires a building permit, which is subject to a mandatory review policy under local planning rules.³⁵ The tower is located in a residential neighborhood, with approximately 1,500 homes located within one mile and homes as close as 200 feet from the tower base. In the past, neighbors have opposed any new construction on the tower. The City of San Francisco has a history of allowing neighborhood input to weigh heavily in Planning Commission decisions. If repacking-related modifications to Sutro Tower generate concerns on the part of neighborhood residents about, for instance, RF exposure, stations might face nearly insurmountable problems making the necessary modifications to their post-repacking facilities.³⁶

Recent experience suggests that the permitting process alone could be costly and time-consuming. The General Manager of Sutro Tower has advised that in the DTV transition

³⁵ In addition, the permit application would require an environmental impact report if changes to the tower structure or attachments were to change the nature of the facility significantly.

³⁶ Although RF radiation issues are within the Commission's jurisdiction, they are generally considered by local zoning authorities and can weigh heavily in San Francisco Planning Commission decisions specifically. In prior permit application processes, Sutro Tower broadcasters were able to demonstrate that RFR exposure to neighborhood residents would decrease due to increased use of UHF antennas with improved vertical pattern control. Any use of new, lower-gain VHF antennas in response to repacking likely will cause the predicted RFR exposure to increase again, which is almost certain to generate strong opposition from Tower neighbors, who are likely to insist that RFR be maintained at current or lower levels. If the Planning Commission were to agree, stations could well be required to make reductions of power below Commission-sanctioned levels—but this would violate the Spectrum Act's mandate that population served and coverage area be preserved.

process, each individual permit that was required for a new antenna incurred legal fees of approximately \$200,000, and he estimates that it would cost approximately \$250,000 in legal fees to prosecute each new permitting application before the Planning Commission to effectuate the repacking. Prior to the DTV transition, there were 22 antennas on the Sutro Tower. By June 2009, after the transition, 11 antennas had been taken down; only 11 remained. Two new stations currently wish to move their antennas to Sutro Tower, and in April 2013, the parties began the process of seeking the necessary permits for adding new antennas. Six months later, that process has yet to be completed—indeed, the parties spent three months negotiating what the permit application process would be.

In short, Sutro Tower illustrates many of the unique, situation-specific, unpredictable factors that will affect the costs broadcasters will incur in the repacking; it also highlights the importance of timing issues discussed more fully in Section III. Several of the current 11 Sutro Tower stations are likely to be repacked to new channels, which will affect every station on the tower. But the determination of necessary changes to the tower itself and the affected stations' facilities, as well as the process of securing permits for changes to the tower, cannot begin until stations know their new channel assignments. Until the Commission gives stations that information, they cannot know what their new antennas will look like—or what tower modifications will be necessary to accommodate them.

3. Bulk Purchasing Would Suffer from Practical Limitations

The television broadcast industry rarely engages in bulk purchasing for much the same reason that relocation costs are not generic: The needs and circumstances of individual stations, even stations within a single station group, are highly individualized, and broadcasters frequently purchase packages of different elements based on the unique needs of each station. Those varied

packages do not lend themselves to bulk or volume orders or discounts. In some circumstances, broadcasters can obtain discounts based on overall dollar volume, but channel-specific equipment purchases (which are likely to make up a significant portion, if not the majority of post-repacking purchases) tend not to produce these sorts of discounts.³⁷ In any event, scheduling issues are typically higher priorities for broadcasters than bulk-purchase discounts.

NAB agrees with Sprint Nextel's view of bulk purchasing, which was artfully articulated in Sprint Nextel's initial comments on the incentive auction. During the 2 GHz BAS relocation enterprise, Sprint Nextel voluntarily

chose to enter into bulk purchase contracts . . . to provide assurance to equipment manufacturers that they would be reimbursed for the large quantities of raw materials that would need to be purchased to seed production lines. By contrast, these concerns do not seem to pertain to broadcaster relocation since vendors would have the full backing of government guarantees and the TV Broadcaster Relocation Fund to provide funding. In Sprint's experience, bulk purchasing also proved overly complicated: though Sprint did the initial contracting, licensees entered into a direct purchase order with the vendor, resulting in property tax, invoicing, and fixed asset record-keeping issues. Broadcasters likely have very efficient supply chain mechanisms in place and existing relationships with their major vendors. These preexisting relationships would likely enable broadcasters to

³⁷ For example, mask filters are channel-specific, not broadband-capable. Antennas, too, are generally channel specific. Certain antennas have broadband capabilities, but even with respect to those antennas, the associated mask filters remain channel-specific. The *Public Notice* acknowledges as much. See *Public Notice*, Attachment at 2 (“The transmitter output mask filter is channel-specific and will have to be replaced to accommodate any channel change.”); *id.* at 4. Mask filters occupy significant space in stations’ transmitter buildings. Where a station is repacked to a lower channel number, the lower frequencies require larger mask filters, which might in turn require the construction of a larger transmitter building to accommodate the new, larger mask filter (consider, for example, how a 6 x 20 foot mask filter can fit in a 15 x 15 foot transmitter building that was not originally designed to contain it). Cf. *id.* at 6 (“In limited situations, expansion of the transmitter building may be required to accommodate new equipment,” the costs of which will “vary with location, site access, and construction type.”).

procure the necessary equipment faster and at a lower cost than a bulk purchasing contract could achieve.³⁸

In short, the private entity with perhaps the most recent real-world experience using bulk purchasing for a spectrum relocation project on a large scale—although a scale smaller than the expected scale of the post-auction repacking—has pointed out that bulk purchasing in this context is not a realistic option. The Commission should heed Sprint’s experience.

If the Commission means to equate “bulk purchasing” with “volume discounts,” NAB observes that sometimes a large television group operator may obtain somewhat better pricing than a single television licensee but that is primarily the result of being a more frequent customer. We also note that television broadcasters with equipment maintenance, repair, and service needs may at times regard service first or service “on demand” as more important than receiving a financial discount on a piece of equipment. Given the narrow window of time for repacking, prompt service from manufacturers, vendors, and contractors of all kinds may very well prove to be more important to many stations. For instance, a Midwestern television broadcaster with approximately a dozen stations described its deliberate approach to developing a “strategic” relationship with a certain tower company during the DTV transition with the goal of ensuring that the tower company would provide services on the broadcaster’s timeline. Given such marketplace considerations, the Commission should not regard equipment or services obtained without a volume discount to be an unreasonable expense.

The *Public Notice* also asks whether there are “ways to encourage manufacturers and service providers to establish prices with built-in discounts that reflect the volume of business

³⁸ Comments of Sprint Nextel Corporation, GN Docket No. 12-268 (Jan. 25, 2013), at 15 (“Sprint Nextel Comments”).

that channel reassignments will generate.”³⁹ To the extent that volume purchases are feasible in connection with post-repacking relocation, the availability of bulk-purchase or other similar discounts is an issue that should be addressed by the vendors themselves.

4. Many Factors That Will Influence Repacking Costs Are Not Within Broadcasters’ Control

Finally, as it attempts to determine whether certain cost constraints can be imposed on broadcasters’ repacking-related expenses, the Commission should recognize that equipment and service costs are influenced by factors largely, if not wholly, outside broadcasters’ control. Costs are determined by manufacturers, suppliers, and installers, and the prices for various services and products will be driven upward by a scarcity of time and resources.⁴⁰ Broadcasters will be largely at the mercy of (the often limited number of) vendors who can supply the equipment and services essential to repacking. Equipment prices also are influenced by external factors wholly unrelated to broadcasters’ purchasing decisions. The price of equipment such as transmission line that includes a large copper component, for example, will be significantly influenced by the market price of copper at the time of a station’s purchase. These and other factors will be impervious to cost-saving efforts by broadcasters.

B. Imposition of a Competitive Bidding Scheme Would Be Impractical, Too Time Consuming and Potentially Risky

The *Public Notice* seeks comment on “whether to require entities seeking reimbursement

³⁹ *Public Notice* at 2.

⁴⁰ See Sprint Nextel Comments at 12 (“[T]he Commission should immediately undertake discussions with the major vendors necessary for successful broadcaster transitions (and multichannel video programming distributor (MVPD) reconfigurations) in order to fully understand their requirements, cost estimates, and estimated time lines to complete repacking in a market or on a national basis.”).

from the Fund to obtain competitive bids for equipment and services that exceed a certain dollar threshold” and, if so, how to define and administer such a requirement.⁴¹ NAB feels strongly that a competitive bidding requirement should not be imposed.

Broadcasters generally do not engage in competitive bidding because they develop individualized relationships with vendors that are able to serve the unique needs of each station. A requirement that broadcasters seek competitive bids for costs incurred in the repacking process almost certainly would disrupt those long-standing relationships, with no appreciable benefit (in terms of cost savings or otherwise). If a station has developed a relationship with a specific vendor to date and feels confident that the vendor can reliably and cost-effectively meet the station’s relocation needs, it should be allowed to call upon that vendor. Such an approach would be eminently reasonable; a contrary rule could have serious negative implications for the important business relationships between stations and preferred vendors.

Moreover, implicit in a competitive bidding regime is the notion that the lowest bid should be accepted or that the lowest bid is the ceiling for defining “reasonable” expenses eligible for reimbursement. Neither concept is sustainable. Beyond putting longstanding station-vendor relationships at risk, requiring the lowest bid to be accepted would, more significantly, put quality and safety at risk. For example, broadcasters almost unanimously contract with tower crews that have previously performed work on their tower. Installing and uninstalling antennas on a tower structure is a dangerous undertaking under the best of conditions; installing and uninstalling multi-ton antennas on tall towers, in an RF environment, in shifting weather conditions, on a tight timeline, requires skill and caution, and there is no substitute for

⁴¹ *Public Notice* at 2.

experience. The Commission should not adopt rules encouraging a cottage industry of inexperienced tower crews—but a low-bidder-wins or low-bidder-sets-the-eligible-expenses-standard would do precisely that.

And making a low bid the presumptive ceiling for eligible expenses would allow unqualified third parties to effectively game the system and introduce potential fraud, waste, and abuse into the process. A party with questionable ability to provide reliable and timely service could submit a bid to a station and lowball a bona fide vendor. That would set the presumptive reasonable price, and if the station used its more qualified and experienced vendor instead, the station would not be fully reimbursed. This is clearly not the result intended by the Act.

The added complexities of a mandatory “bidding” process also would take too long to effectuate in a setting in which timing issues will be critical. The compressed timetable for repacking and channel reassignment will create significant demand for equipment and services in a small window of time, which will almost certainly bring new or inexperienced vendors to the table. Without a “qualified bidder” constraint to ensure that bidders are able to meet broadcasters’ specifications, a mandatory competitive bidding process will lead to less cost-effective and efficient purchasing decisions during repacking. The fact that there are only a limited number of vendors capable of producing the specialized, often custom equipment needed by broadcasters makes a “lowest bidder” process impractical, if not entirely unworkable.⁴²

Similar reasoning applies to the *Public Notice*’s proposal that the Commission refer to the

⁴² For example, more companies claim they can perform tall tower work than are actually qualified to do so. Without the proper experience and equipment, such as large gin poles and rigging, these companies will be unable to procure the insurance necessary for big jobs. One reputable, qualified company carries \$20,000,000 liability insurance for these types of projects. *See also* n. 22 (noting the small handful of companies that manufacture television antennas).

schedule of costs that governs General Services Administration contractor relationships.⁴³ The GSA schedule is unnecessarily restrictive and ignores the multiple and varied factors that influence broadcaster costs, as discussed above. A Commission rule limiting reimbursable costs to those identified in GSA Schedules also would unduly restrict broadcasters' choice of qualified vendors. For instance, some vendors who provide goods and services to local broadcast stations are themselves small, local businesses with very different cost and pricing structures than the large vendors that typically serve the federal government. Reference to the GSA Schedules to establish price caps would not account for stations' existing relationships with local vendors.⁴⁴

The example given in the *Public Notice*—HVAC systems—illustrates the point. Broadcasters typically use local contractors and vendors for their HVAC needs. As a fundamental matter of economic scale, a local HVAC vendor cannot get the same price (or, in turn, offer the same price to stations) for an HVAC unit or system that the federal government—the largest purchaser of goods and services in the world⁴⁵—can get. Indeed, as described by OMB, the GSA has the ability to “pool[] the purchasing power of the whole federal government” and, then, to “drive down prices even further, GSA conduct[s] repeated rounds of ‘reverse auctions’—telling vendors what the lowest overall price yet received was, and giving them a

⁴³ *Public Notice* at 2 (“For purposes of reimbursement from the Fund, if certain types of costs included in the Catalog of Eligible Expenses (such as for HVAC systems) are already part of a General Services Administration (GSA) Schedule, should the Commission limit reimbursement to the prices offered by the vendors who sell to federal agencies?”).

⁴⁴ See Section II. A.3., *supra* (discussing importance of pre-existing relationships between stations and vendors in procuring equipment at lower cost).

⁴⁵ See, e.g., Peter Orszag, *Buying in Bulk*, Office of Management and Budget Blog Post (posted June 30, 2010), available at <<http://www.whitehouse.gov/omb/blog/10/06/30/Buying-in-Bulk>> (“The United States federal government is the world’s largest purchaser . . .”).

short turn-around time to lower their prices even more.”⁴⁶ Neither the local HVAC supplier, nor a singleton television station owner, nor even multi-station broadcast groups, possess that kind of purchasing power. It would be fundamentally unfair—and contrary to the intent of the Act—to limit the definition of “reasonable” repacking expenses to the prices catalogued in GSA Schedules as negotiated by the entity with the greatest buying leverage in the world.

From broadcasters’ perspective, there is an important difference between the purchase of equipment standing alone and the ability of a trusted vendor reliably and safely to install, maintain, and service the equipment. A rule limiting reimbursement to the prices offered in GSA Schedules could undermine broadcasters’ ability to call upon trusted and experienced local, regional, and national vendors to maintain critical equipment in a cost-effective manner.

C. Equipment Sharing Is Appropriately Left to the Marketplace

Finally, the *Public Notice* observes that “[b]roadcasters may also realize cost savings, and other benefits, associated with tower co-location or sharing a broadband antenna or other facilities,” and accordingly asks whether broadcasters seeking reimbursement should be encouraged “to pursue tower and antenna sharing arrangements.”⁴⁷ NAB appreciates the potential for cost savings realized from appropriate sharing of equipment but doubts whether the Commission can effectively encourage sharing.

A rule mandating equipment sharing would be entirely unworkable. First, it will be impossible for individual broadcasters to know whether equipment sharing will be feasible until

⁴⁶ Peter Orszag, *Buying in Bulk*, Office of Management and Budget Blog Post (posted June 30, 2010), *available at* <<http://www.whitehouse.gov/omb/blog/10/06/30/Buying-in-Bulk>>.

⁴⁷ *Public Notice* at 3.

the FCC makes new channel assignments and stations and their consulting engineers can study them. Second, the repacking and reimbursement time table established by the Spectrum Act suggests that creating equipment-sharing arrangements on that compressed time table will be difficult. Third, sharing of equipment or facilities depends upon extremely complex business relationships between and among stations that require months or even years to develop and implement, and equipment-sharing arrangements require alignment of a variety of technical and regulatory factors that sharply limit the universe of potential sharing arrangements.⁴⁸

Furthermore, a fundamental goal underlying the Spectrum Act is the preservation of areas and populations currently served by non-volunteering stations. By its very definition, that “preservation” mandate likely limits the possibilities for new equipment sharing among broadcasters.

Consider, for example, the complex and long-term sharing arrangements that exist for five Boston-area television stations on a shared tower in Needham, Massachusetts. The five stations—WBZ-TV, WGBH-TV, WCVB-TV, WSBK-TV, and WGBX-TV—not only share a tower, but also share one segmented Harris/Dielectric broadband antenna, two transmission lines, and one segmented combiner. Currently, four of the stations, WBZ-TV, WGBX-TV, WCVB-TV and WSBK-TV, together occupy the upper section of the antenna and WGBH-TV occupies the lower section of the antenna. In deciding which station(s) should occupy the upper and lower sections, a principal factor was the propagation characteristics of the channels in use. These

⁴⁸ The Commission has already been advised of the complexities of equipment sharing in this docket, specifically on Mount Mansfield in Vermont. *See generally, e.g.*, Reply Comments of Mt. Mansfield Television, Inc., Vermont Public Television, Nexstar Broadcasting, Inc., and Mission Broadcasting, Inc., GN Docket No. 12-268 (Mar. 12, 2013).

propagation characteristics vary with frequency. When one or more channels on the Needham tower is changed in the repacking, significant technical work and testing therefore will be required to determine, in light of their current service areas, whether they can all remain on the tower and whether and how to rejigger or reorder the stations' locations on the shared antenna. The shared antenna is not necessarily a final solution for all five stations after the repacking. Even if the channels are compatible with each other, the antenna is limited in the amount of power that can run through it, and if the power feasibly available to one or more stations translates into a shift or reduction in service area, the current sharing arrangement may be destroyed (a consequence of which may be the incurrence of additional, yet reasonable, expenses).

Rather than create many new opportunities for equipment sharing, the repacking process could in fact undermine many existing sharing arrangements. Stations KMCI-TV (Channel 41) and KSHB-TV (Channel 42), Kansas City, illustrate the point. At present, both stations share a tower with a single antenna (and separate transmitters), an arrangement made possible by their contiguous channel assignments. Both stations will very likely be repacked, but their ability to share equipment following the repacking will be wholly dependent on their new channel assignments. Unless the stations are reassigned to adjacent channels (for example, Channels 20 and 21), they might need two separate antennas—which could affect the stations' ability to use a single tower, as the tower might not be able structurally to support both new antennas. As this situation illustrates, after repacking, combined operations may no longer be possible.

Three stations broadcasting from a common tower in Richmond, Virginia—WRIC-TV (Channel 22), Petersburg, Virginia, WRLH-TV (Channel 35), Richmond, Virginia, and WCVW, Richmond, Virginia (Channel 44)—face a similar issue because they share a combiner.

WNCT-TV and WITN-TV, both in Greenville, North Carolina, similarly share a combiner and transmission line. And three other stations in New Orleans—WNOL-TV (Channel 15), WGNO (Channel 26), and WDSU (Channel 43)—share a common tower, antenna, auxiliary antenna, transmission line, and combiner. In all three cases, and numerous similar situations, if any of the stations is repacked, all stations that currently share facilities are likely to need new equipment⁴⁹—and may not be able to continue to share transmission facilities following the repack.

For all these reasons, the Commission should not mandate equipment sharing by repacked stations and may find it difficult to encourage sharing effectively. In circumstances where sharing of equipment or facilities makes technical, operational, and financial sense, repacked stations will establish sharing arrangements on their own initiative, as they always have. The issue of equipment sharing is best left to resolution in the marketplace as circumstances allow on a case-by-case basis.

III. To Effectively Manage Repacking Costs, the Commission Must Carefully Determine the Completion of the Forward Auction and the Timing of the Repacking and Reimbursement Processes

One of the most significant factors affecting repacking costs relates to the *timing* of the closing of the forward auction, which, in turn, affects the repacking reimbursement process—a factor that lies exclusively within the Commission’s control. As NAB and other commenters stressed in their comments in response to the Spectrum NPRM,⁵⁰ it is critical that the

⁴⁹ For example, where stations share a combiner, even if only one of the stations’ channels is changed, a new combiner will be necessary if shared transmission facilities remain feasible post-repacking.

⁵⁰ See NAB Spectrum Comments at 49-51 (urging the Commission to deem the forward

Commission afford broadcasters the maximum amount of time possible to respond to and prepare for repacking and channel reassignment. The three-year time frame for completing the relocation and reimbursement processes is daunting, and broadcasters predict that the post-auction repacking process will be significantly more complicated and time-consuming than many appear to anticipate. For the Commission and broadcasters to have any realistic hope of meeting the Spectrum Act's deadline, it will be essential to provide broadcasters as much "lead time" as possible in advance of the deadline.

With respect to the issues raised in the *Public Notice* specifically, the compressed timetable for completing repacking and relocation will very likely impact—and, specifically, will *increase*—costs over what would otherwise be "normal" costs of upgrading or replacing equipment. In those circumstances where broadcasters have been able to achieve cost savings by working closely with preferred vendors, timing has often been an important factor: A station can get a better price if it is willing to wait for equipment to become available on the vendor's timetable. In the compressed time frame for repacking, of course, waiting for advantageous pricing is not an option. The limited number of tower crews available and qualified to respond to stations' channel reassignment needs will likely increase costs.⁵¹ The number of crews qualified

auction complete only when stations file construction permit applications to change channels and final licenses are issued to auction winners); Affiliates Spectrum Comments at 48 (same).

⁵¹ In response to the Spectrum NPRM, various commenters pointed out the limited number of tower crews qualified to undertake the modifications necessitated by repacking. *See, e.g.,* Affiliates Spectrum Comments at 51-52. On that point, NAB notes that the heavier the antenna (which can weigh 12 tons and more), and the higher the tower, the number of crews qualified to install or repair it are even more limited. The majority of tower crews today are engaged in installation of far lighter cellular telephone antennas on short towers, which can be installed by crew members carrying the backpack-sized antennas up the tower. Multi-ton television antennas, by contrast, are installed by a gin-pole system erected on an existing tower structure. The staging process for the gin-pole system alone can take as much as a week;

to retune existing transmitters (for those transmitters capable of such retuning to the new channel) and install new transmitters is likewise limited. In both circumstances, an increased demand for a relatively scarce service can be expected to drive up the price of that service. The scarcity consideration can be minimized by affording broadcasters the largest possible window of time to construct and install their new facilities.

Timeliness is critical to the efficient and cost-effective administration of the repacking and reimbursement processes for another reason as well. Many relocation costs (including such critical items as engineering studies, antennas, and transmitters) relate to equipment and services that cannot be secured until the Commission tells stations their new channel assignments. Transmitters, for instance, may or may not be re-used by repacked stations. Solid-state transmitters generally can be re-tuned within a range of plus or minus a few channels, but whether stations will need to purchase new transmitters or are able to use existing transmitters cannot be determined until stations learn their new channel assignments.⁵²

Accordingly, the new Table of Allotments should be released at the earliest possible date. Broadcasters must be given the earliest possible notice of their channel reassignments so they can begin planning for the expenses and logistics of repacking, including the feasibility of

preparing a gin pole is like erecting a tower atop of another tower. The time required to undertake the installation, coupled with the relative scarcity of qualified crews, certainly will affect stations' costs. There are only about a half dozen crews qualified and capable of working on tall towers above 1500 feet, and about another half dozen crews qualified and capable of working on towers between 500 and 1500 feet.

⁵² IOT transmitters can be re-tuned, but the re-tuning process itself will require substantial down-time—approximately 48 hours—as well as a new channel-specific mask filter, which can require modifications to the transmitter building itself. And even if a station's transmitter can be used with its new channel assignment, it might not have the necessary power capacity and thus will need to be replaced anyway, notwithstanding its retuneability. Mask filters are generally not field tunable.

sharing equipment. Early notice will maximize stations' ability to engage in long-range planning and to make cost-effective decisions on reassignment-related expenses. The Commission can accomplish much of what the *Public Notice* aims to do—ensure optimal decision-making by broadcasters to minimize relocation costs—simply by giving broadcasters the maximum amount of time to respond to channel reassignments. Therefore, in addition to providing the new Table of Allotments as soon as possible, the Commission should declare the forward auction closed at the latest possible date.⁵³

IV. NAB Proposes an Approach to Administering the Fund That Both Satisfies the Spectrum Act and Provides Broadcasters with Essential Flexibility

In response to the *Public Notice*'s call for “additional cost mitigation and transition coordination strategies that could reduce expenses and facilitate broadcasters' moves to new channels,”⁵⁴ NAB proposes a road map that will meet the Act's goals of ensuring full compensation for non-volunteering broadcasters forced to move in the repacking and preservation of the essential broadcasting services they provide—and will do so in a fair and efficient manner. Rather than adopt a strict schedule of reimbursable costs that does not account for the inevitable variation in each station's unique circumstances or the significance of factors that broadcasters cannot control, NAB urges the Commission to adopt a repacking and reimbursement procedure built around the following principles:

First, the Commission should hire an independent, third-party administrator to manage the broadcaster reimbursement program. An independent administrator with no ties to entities

⁵³ See NAB Spectrum Comments at 49-51.

⁵⁴ *Public Notice* at 3.

potentially entitled to reimbursement should help to guard against fraud, waste, and abuse, including by conducting spot audits of claimed expenses.⁵⁵

Second, the Commission should develop a set of principles that will guide the determination of “reasonableness” in evaluating costs submitted by broadcasters seeking reimbursement. For example, it might well be “reasonable” for a station to use the same manufacturer to purchase its new antenna and/or transmitter, without undertaking a competitive bidding process, as it used to purchase its existing equipment.⁵⁶ Such a nuanced approach would better reflect the reality that broadcasters’ costs are not generic but instead are highly individualized. Using knowledge gained about channel reassignment during the digital television transition, NAB and the broadcasters stand ready to assist the Commission in developing guidance for determinations of “reasonableness.”

In determining whether broadcasters’ costs are “reasonable,” the Commission should bear in mind that broadcasters faced with channel reassignment have every incentive to get the best possible price for equipment and services and to undertake mandated relocation in the most cost-effective manner possible, because they cannot be absolutely certain—the Act’s mandate notwithstanding—that they will be made entirely whole. Given the room to exercise discretion and sound business judgment, broadcasters’ own efforts will go far toward minimizing unnecessary repacking costs.

Third, as discussed in detail in Section III, one critical step in controlling the costs of

⁵⁵ See NAB Spectrum Comments at 60-62; *see also* Affiliates Spectrum Comments at 49.

⁵⁶ As Sprint has explained, broadcasters’ pre-existing relationships with vendors will be effective in enabling the efficient and cost-effective procurement of equipment needed for repacking. *See* Sprint Nextel Comments, at 15.

relocation is maximizing the amount of time for broadcasters to prepare for repacking. The Commission should assist broadcasters in managing their relocation costs by declaring the forward auction closed at the latest possible date, and by giving broadcasters the earliest possible notice of their channel reassignments.

Fourth, broadcasters should be required to certify their costs, under penalty of forfeiture by the Commission, as being “reasonably necessary to reach the audience in their contour.” The Commission would be free to review the certifications and related reimbursement requests and to penalize false certifications. Such a certification will further minimize potential fraud, waste, and abuse.

Fifth, NAB again urges the Commission to make every effort during repacking to minimize the *number* of stations that have to be relocated and the size of frequency shifts in order to minimize relocation costs.⁵⁷ NAB reiterates (and numerous commenters have agreed) that the Commission must treat the \$1.75 billion allocated to the Fund as its “budget” for repacking.⁵⁸ As NAB has explained, Congress created the Relocation Fund as a means to make whole those non-volunteering broadcasters subject to repacking. That statutory mandate can be fulfilled only if the Commission recognizes that the Fund must constrain the number of television stations that can be repacked. The Commission should repack only the number of

⁵⁷ See also NAB Reply Comments at 58 (urging the Commission to minimize repacking to preserve access to over-the-air television service by underserved populations).

⁵⁸ See NAB Spectrum Comments at 6-7, 48-49; NAB Reply Comments at 4-5, 37-42; see also Affiliates Spectrum Comments at 46-47; Comments of Sinclair Broadcast Group, Inc., GN Docket No. 12-268, at 15; Comments of Belo Corp., GN Docket No. 12-268, at 19.

stations that it will be able to reimburse fully for their relocation costs.⁵⁹

Conclusion

For the foregoing reasons, NAB respectfully suggests that the Commission adopt a repacking and reimbursement procedure built around the principles outlined above, as well as those expressed in NAB's initial and reply comments to the Spectrum NPRM.

Respectfully submitted,



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⁵⁹ NAB estimates that the Commission will be able to repack 400 to 500 stations. *See* NAB Spectrum Comments at 6-7, 49. *See also* Affiliates Spectrum Comments at 46-47 (reciting industry estimates that no more than 400 to 500 stations can be repacked within the \$1.75 billion budget).

ATTACHMENT A

Eligible Broadcaster Spectrum Repacking Expenses

Transmission-related expenses

- * New transmitter or retune existing transmitter
- * New auxiliary transmitter or retune existing auxiliary transmitter (where existing auxiliary facility is licensed)
- * New antenna or modify existing antenna
- * New auxiliary antenna (where existing auxiliary facility is licensed)
- * New mask and other filters
- * New combiner (for stations sharing feed line or antenna)
- * New exciter
- * New transmission line or wave guide
- * Temporary antenna
- * Temporary transmitter
- * Temporary transmission line
- * Temporary electrical power
- * New controllers and other equipment associated with above when existing equipment is not compatible with new equipment
- * Equipment to change translator input channels
- * Proof of performance testing
- * Removal and disposal of old and/or temporary equipment
- * Installation for all of above, including third party and internal labor costs (e.g., personnel time spent on modifications and accounting/cost reconciliation, overtime, etc.)

Tower and other facilities-related expenses

- * New tower or existing tower upgrade or modifications to main and/or backup towers
- * New building or modifications to existing building to house new transmitter and other equipment
- * Land (for new tower or new facility)
- * Contractual liability to current tower landlord if new tower is necessary
- * Contractual liability to other site users when they are directly impacted (e.g., service interruptions, temporary facilities, shared antenna)
- * Difference in tower rent
- * New power plant equipment, including extension of electricity to new site
- * New HVAC equipment
- * New STL and ICR to new site
- * Moving costs to haul equipment to new site
- * Removal and disposal of waste

Professional, legal, and other fees

- * Engineering fees (for designing new facility; for tower loading evaluation; for site surveys; for building modifications)
- * Fees for tower and RF compliance testing
- * Expenses and fees associated with obtaining FAA clearance for a new or modified tower proposal
- * Permitting fees
- * Legal and expert fees (for applications; for zoning, environmental, and historical preservation compliance issues; for real estate (acquisition or leasehold); for tax advice on how new/replacement equipment is taxed)
- * FCC filing fees for construction permits and new licenses (if not waived by FCC)

Ancillary expenses necessitated by repacking process

- * Microwave, fiber, or other delivery expenses to ensure delivery to cable headends or satellite local receive facilities that are reached by existing facilities but are not by new facilities or that are necessary on a temporary basis to bridge any gap in full power operations (e.g., extended periods of silence)
- * Replacement of wireless microphones, interruptible foldback (IFB), and headsets that are displaced from now unused TV channels
- * Additional or “bridge” insurance
- * Expenses associated with educating viewers about rescanning
- * Expenses associated with possible medical telemetry interference notifications
- * Tax consequences (e.g., depreciation schedules rendered inaccurate)