

represents not a benefit but mostly an engineering challenge to be worked around. In addition, main transmitters can be quite expensive to construct, maintain, and locate. In New York, for example, the rental expense of main transmitters can cost more than several hundred thousand dollars per year since they occupy some of the costliest real estate in the country. In every market main transmitters requires substantial energy expenses that may be unnecessary. The cost of insurance for large towers especially is prohibitive, and GBS has worked with multiple broadcasters who faced unavailable or unaffordable insurance costs for these tall towers and have been forced to “self-insure.” Lastly, the expense of regular maintenance for a significant number of main transmitters can easily exceed tens of thousands of dollars per year.

To be sure, some broadcasters depend on their main transmitter to serve their community and want to continue to use that same technology – and nothing should change that. But the Commission’s rules should contain more flexibility for broadcasters who want to use alternative technology to the main transmitter. This modernization of the rules would enable radio broadcasters to quit using a main transmitter (or substantially reduce its power) and instead use a system of distributed transmission systems (“DTS”) to serve their community in a manner that meets the same coverage and non-interference requirements as the main transmitter, but without the high operational expenses.

This proposal squarely fits within the Commission’s *Delete, Delete, Delete* proceeding since the proposed rule change would unburden some broadcasters from expenses being borne solely due to a regulation that is outdated for how these broadcasters operate in 2025. Moreover, this proposal reflects technological changes in the radio industry over the past couple decades, benefits from experience gained from implementation of the rule, and finds support in a cost-benefit analysis that overwhelmingly favors the proposed rule modification.

These comments first describe how implementation of the main transmitter requirement has shown that such a requirement is unnecessary; explains that the costs of main transmitters far outweigh their benefits; and details how technology has advanced to make the main transmitter requirement obsolete. The comments then discuss how the Commission should update its main transmitter rule in Section 73.1665 to give broadcasters more flexibility in how they comply with the coverage and interference requirements. This proposed rule change may require conforming changes in other rules, but given the early stage in the process we suggest that exercise is best accomplished in discussions with the staff and other stakeholders when the Commission moves to the next stage in this proceeding.

II. Experience Shows that the “Main Transmitter” Requirement Is Not Necessary and Some Broadcasters Could Use DTS to Serve Their Community

An inflexible main-transmitter requirement with no alternative technology allowed forces broadcasters to maintain expensive equipment that is not the most effective way to reach their audience. When this version of the main transmitter rule was adopted nearly fifty years ago, main transmitters were the only and best available way to broadcast a signal across a wide area. But one needs to understand that main transmitters from the very beginning had challenges in covering their full service area – that is why in the same time frame the Commission also adopted rules allowing boosters, thus demonstrating that there always have been gaps inherent in the operation of main transmitters for boosters to supplement.³

Today, some broadcasters mostly use boosters to serve their listening audience and the “main transmitter” at best serves a secondary purpose. There are scores of radio stations that

³ Boosters are low-power transmitters that re-broadcast the signal of the main transmitter and use the same frequency as the main transmitter. *See* 47 C.F.R. § 73.1670. Boosters are distinct from translators, which transmit the main transmitter signal but operate on a different frequency. *See generally* 47 C.F.R. § 74.1201.

could benefit from the elimination of the main transmitter signal in favor of distributed transmission. Broadcasters in cities major markets such as Las Vegas, Denver, Salt Lake City, San Francisco, Oklahoma City, and in smaller markets from Spokane, Washington to Cumberland, Maryland could provide more robust and complete coverage inside their contours using a system of distributed transmission technology via “boosters” than relying on the main transmitter to serve core audiences.

Additionally, many radio stations that are fully spaced as a full class station (e.g., Class C with a 91.8 km primary service contour) cannot serve the entire contour to which they have been assigned since they cannot build a tower to achieve 600 meters height above average terrain (“HAAT”). So while pursuant to the FCC Table of Separations the station is fully protected to the full-class facility, as a practical matter the tower the station can construct does not transmit a quality signal over the total area they are authorized to serve. This regulatory anomaly – where the theory in the FCC’s decades-old rules meets the reality in the marketplace – could be cured if that broadcaster could use a distributed transmission system focused on a full-service “reference coordinates” (discussed below) established by the broadcaster since that would enable the station to fully serve the area they are allocated without the need to erect tall towers or build in environmentally sensitive areas.

In considering the scenario described above and many others that exist in the everyday world where radio broadcasters must operate, the Commission should ask whether a one-size-fits-all requirement based on a technological paradigm from the early part of the last century still makes sense when current technology can better serve the same community but with more flexibility and at a lower cost. Applying the factors set forth in the Public Notice, the answer is clearly No.

Giving radio broadcasters this flexibility would yield other public interest benefits as well. The Commission is rightly concerned about the vital “first responder” role served by broadcasters during times of natural disaster,⁴ but the FCC’s main transmitter rule mandates that all radio broadcasters have a centralized (sometimes very tall) broadcast tower that represents a single point of failure and can be taken offline by tornadoes, hurricanes, and other natural disasters. In the days after Hurricane Helene, multiple States reported several radio station outages. For example, five days after Hurricane Helene hit, twenty FM and four AM radio stations were out of service in Georgia.⁵ In the moments when people need radio service most, the radio broadcast system is vitally important and should be highly reliable. Main transmitters may be necessary in many markets but they also represent single points of failure, and so requiring all broadcasters to rely on them when the community could be served by a distributed technology adds unnecessary stress to the system at crucial times.

III. The Costs of Main Transmitters Far Outweigh Their Benefits

Because main transmitters need to be positioned at high elevations to transmit their signal as widely as possible, they often must occupy some of the most expensive real estate in the country. In New York City, some radio main transmitters sit atop the Empire State Building, where rent expenses costs hundreds of thousands of dollars. Other major cities such as San Francisco, San Diego, Denver, Austin, and Seattle, also feature main transmitters in downtown

⁴ See, e.g., *In the Matter of Resilient Networks Amends. to Part 4 of the Comm’s Rules Concerning Disruptions to Commc’ns*, No. 15-80, 2024 WL 356876, at *1 (Jan. 26, 2024) (“[N]ation’s communications networks play a vital role in economic growth and national security and serve as critical links for consumers and public safety response personnel during emergencies and disaster response.”).

⁵ See *Communications Status Report for Areas Impacted by Hurricane Helene*, (rel. Oct. 1, 2024), <https://docs.fcc.gov/public/attachments/DOC-406055A1.pdf>.

areas when those communities could be equally (or perhaps better) served with a distributed transmission network.

The Commission's inflexible requirement on main transmitters imposes other high costs on radio broadcasters some of whom could serve the same community with more efficient DTS. For one, main transmitters need expensive energy to run and require costly maintenance. To illustrate: operating a radio station at 50,000 watts full-time and using the nationwide average of electricity prices on a kWh basis results in costs of over \$65,000 per year.⁶ Another example: GBS works with one radio broadcaster who spends \$5,000 per month in fuel costs for a transmitter that is not connected to the electrical grid. These energy expenses are substantially higher than the energy costs associated with shorter, distributed transmitters.

The FCC's main-transmitter rule also can saddle radio broadcasters with large construction and maintenance costs as well as hefty annual insurance premiums. In those markets with very tall towers, the costs associated with, say, a 2,000-foot tower means a radio station can spend over \$5 million to build the tower, and the cost of maintaining a main transmitter can run hundreds of thousands of dollars. Add to this the cost of rapidly rising insurance premiums, especially for towers in "tornado alley" States and those States frequently hit by hurricanes in coastal regions.⁷ Simply put, the main transmitter rule forces some

⁶ Calculated based on 50,000 watts at 100% capacity for 24 hours/day, including transmitter, HVAC, and peripheral equipment, with a nationwide kWh price of \$0.13 (based on Energy Information Administration data for commercial users). Energy costs are higher in urban areas which are home to more radio stations, and those stations could benefit most from modifying the main-transmitter rule.

⁷ See *Commercial Insurance Rates Plus 3% in Q1 2025*, <https://marketscout.com/commercial-insurance-rates-plus-3-in-q1-2025/> (last visited April 10, 2025) (commercial insurance rates increased by 3% in 1Q25, continuing upward trend).

broadcasters who could use a SFN approach to serve their community to instead buy services they do not need simply to satisfy the FCC's inflexible rule.

Another aspect of the cost-benefit analysis is the cost to the public. Here, the costs to the public would be zero because the radio broadcaster still would be required to serve its community of license in the same manner as it does now with the main transmitter. Thus, from the public's perspective this modernization of the FCC's rules would have no negative impact and in times of natural disaster the new approach may prove to be a vastly improved system.

Turning to the benefit side of the equation, approximately 450 FM booster stations are presently licensed or authorized for construction by the Commission across the country, and so the benefits of boosters to serve a community have been clearly established. The benefits from a public interest perspective are therefore clear: in some markets and for certain broadcasters, a broadcaster can show the Commission and the public that a distributed transmission system can provide at least the same coverage of the community as a main transmitter (and frequently better quality signal) with a reduced outlay for capital and operational expenditures. Consequently, the cost-benefit analysis is straightforward: the current state of booster technology has advanced to give some broadcasters a fully functional alternative to a main transmitter at reduced costs. Accordingly, the proposed rule change easily passes the cost-benefit analysis. Removing the inflexible main transmitter requirement would provide significant cost savings to businesses in a competitive and financially challenging marketplace.

IV. Booster Technology has Advanced to Make Main Transmitters Unnecessary

The advent of cellular radio technology and the application of that technology to the broadcast industry has changed the paradigm of how radio signals can be delivered served to the public. Instead of covering an area with one tall tower operating at high power, shorter towers located frequently much closer to population centers allow for more efficient coverage, and this

engineering approach easily can be designed to cover an entire market area if desired. The increased sophistication of fully synchronized boosters over the past decade or more has enabled FM broadcasters to take advantage of this shift in technology. Consequently, today it is possible for FM stations to cover their given service area with a combination of a main transmitter and boosters; or with a series of reduced-power boosters without the main transmitter at all. Importantly, this configuration serving a community with a distributed transmission network does not need more spectrum, since the boosters all operate on the same assigned channel as the main transmitter. Equally important, this approach also does require a change in the contour of the station, since the booster operations must stay with the designated contour.

To illustrate how this proposal would work in practice, see Attachment A which shows a “before” and “after” map for KOAS-FM in Las Vegas, NV. These maps demonstrate how a broadcaster seeking to deploy a distributed transmission network could satisfy the Commission that its proposed coverage plan (a) served its community at least as well as the main transmitter and (b) maintains all pertinent protections based on the station class. In the attached illustration, KOAS-FM meets both of those important regulatory and licensing requirements and does so without the substantial expense of maintaining a 1,300 foot tower.

V. The Commission Should Revise its Rules to Make the Main Transmitter Rule Optional and Authorize Use of “Primary Transmitters” to Serve a Community

In keeping with the request in the Public Notice to “alleviate unnecessary regulatory burdens,” the Commission should amend its rules to exempt a radio broadcaster from the main transmitter requirement if such broadcaster has demonstrated that it will use a network of transmitters (which could be referred to as “Primary Transmitters” or a similar term) to cover their community at least as well as the main transmitter and also will cause no new interference issues with other broadcasters. The Commission could do so by (i) adding an exemption to 47

C.F.R. § 73.1665, (ii) adding a definition of “Primary Transmitters” (or similar term), (iii) revising the rule to allow a broadcaster to use that technology to meet its service obligations, and (iv) implementing conforming changes as necessary throughout the rules.⁸

Importantly, the Commission still would retain its vital role as regulator and licensor of radio transmitters and would not need to dramatically change its current approval process for broadcasters choosing to use a distributed transmission network. We suggest the Commission retain all of the current rules for allocating a given facility. Fully spaced reference coordinates would be established and adjusted just as they are currently. From that maximum facility, a “reference protected contour” would be generated just as if the tower had been built. Once that allotment were established, the licensee would have authority to fill the reference protected contour as made sense for that broadcaster. Thus, a radio broadcaster could opt for a full-height, full-power configuration as is used today; alternatively, a broadcaster could have the ability to choose a lower power main with on-channel boosters to fill in the contour; or a broadcaster could opt for no main transmitter at all and the reference contour would be filled with boosters (or “primary transmitters”) as the licensee sees fit as long as (a) the city of license is properly served and (b) the signal respects the contour. Notably, this approach builds on the Commission’s actions to permit SFNs for television broadcasters.⁹ In this manner, the Commission would retain its core regulatory function of spectrum regulator and ensuring quality service while also giving broadcasters much-needed flexibility in how to accomplish those goals.

⁸ As mentioned above, we welcome the opportunity to review those issues with the staff and interested parties as this proceeding moves forward.

⁹ See, e.g., *Authorizing Permissive Use of the “Next Generation” Broadcast Television Standard*, GN Docket No. 16-142, Report and Order and Further Notice of Proposed Rulemaking, 32 FCC Rcd 9930 (2017).

VI. Conclusion

This proceeding enables the Commission to review inflexible and outdated regulations and revise them to stay current with the 21st Century. The main transmitter rule is one example in which the Commission could serve the public interest and also help the radio industry by giving more technology flexibility, allow substantial cost savings for some broadcasters, and continue to ensure the public receives a quality radio signal. We urge the Commission to revise its rules as proposed herein.

Respectfully submitted,

/s/

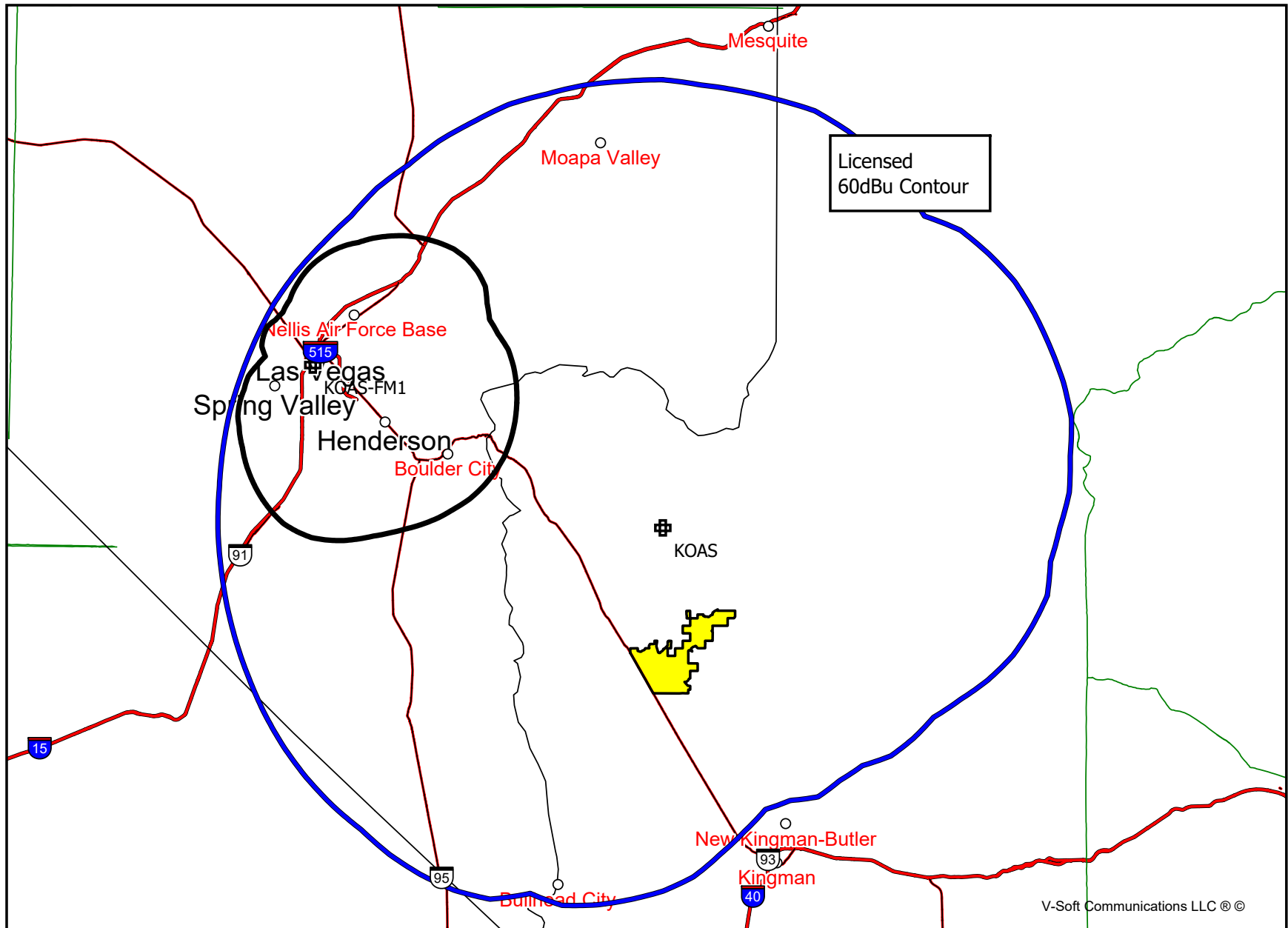
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Attachment

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Attachment A

KOAS As Licensed Currently



KOAS Proposed, No Main

