

Before the
DEPARTMENT OF HEALTH AND HUMAN SERVICES
Washington, D.C. 20201

<i>In the Matter of</i>	)	
	)	
	)	
Request for Information on Electromagnetic	)	Docket No. HHS-OASH-2026-0397
Fields (EMFs), Radiofrequency (RF)	)	
Radiation, and Wireless Radiation Exposure	)	
	)	

COMMENTS OF THE SAFER BUILDINGS COALITION

EXECUTIVE SUMMARY

The Safer Buildings Coalition (“SBC”)¹ is a cross-sector membership organization of public safety agencies, industry organizations, and the owners and operators of buildings where in-building coverage is required. SBC does not offer scientific conclusions on the biological effects of radiofrequency (“RF”) energy and defers on those questions to the expert agencies and standards bodies responsible for them. SBC’s comments address the public safety benefits and costs that any complete assessment of RF exposure policy must weigh.

In-building wireless coverage is a cornerstone of emergency communications. Americans spend about 90 percent of their time indoors, and about 80 percent of 911 calls are placed from wireless devices. Cellular coverage allows building occupants to reach 911, and public safety radio coverage allows first responders to communicate once they are inside. The International Fire Code (“IFC”) and the National Fire Protection Association’s (“NFPA”) NFPA 1225 require building owners to provide and maintain minimum levels of public safety radio coverage.

¹ The Safer Buildings Coalition represents emergency services, building safety officials, wireless infrastructure providers, and technology companies working to improve emergency communications and building connectivity.

That coverage depends on wireless infrastructure engineered to existing federal standards. Distributed antenna systems (“DAS”), Emergency Responder Communications Enhancement Systems (“ERCES”), indoor small cells, signal boosters, and Wi-Fi are required to comply with Federal Communications Commission (“FCC”) rules, including the FCC’s RF exposure requirements. More than 830,000 indoor small cell and DAS nodes are in service nationwide, and in-building systems typically cost \$1 to \$5 or more per square foot.

Changes to RF exposure limits could force costly redesign and reduce coverage. Lower permissible antenna power, minimum distances between antennas and occupants, or setbacks from homes, schools, and healthcare facilities would require disproportionately more antennas, could render existing systems incompatible with new limits, and could place building owners in conflict with fire-code signal requirements. Redesign or replacement of only 10 percent of existing indoor nodes would cost an estimated \$820 million, before counting Wi-Fi networks, public safety ERCES, equipment removal, and recertification.

Policy focus should be directed at eliminating in-building dead zones. Federal law already requires the FCC to measure and map broadband availability, but no comparable data exists for coverage inside buildings. Publishing in-building coverage data would inform policymakers, allow building owners to make informed investment decisions, and let market forces drive private investment to close the in-building coverage gap.

SBC recommends that the Department of Health and Human Services (“Department” or “HHS”) base any conclusions on robust, peer-reviewed scientific evidence; evaluate the consequences for public safety communications before recommending any change to exposure limits, siting restrictions, or setbacks; preserve regulatory certainty and coordinate with the FCC

in its parallel proceeding; and support the collection and publication of in-building wireless coverage data.

I. INTRODUCTION AND PERSPECTIVE (QUESTION 2).

SBC respectfully submits these comments to the Department in response to the above-captioned Request for Information (“RFI”).² For more than a decade, SBC has worked to eliminate in-building wireless dead zones through codes and standards development, workforce training, and policy leadership.

SBC is a cross-sector membership organization whose members span the full chain of in-building public safety communications. As of October 21, 2026, SBC’s membership includes 102 public safety organizations and 635 individual public safety members and agency representatives; 119 industry organizations, including suppliers, contractors, and service providers; 35 enterprise organizations; 26 industry and public safety associations and agencies; and 25 independent industry consultants and professionals. This composition allows SBC to represent, in a single forum, the agencies that rely on in-building coverage, the companies that design, build, and maintain these systems, and the organizations that own and operate the buildings where coverage is required.

SBC’s ERCES Handbook provides a common framework for building owners, installers, and Authorities Having Jurisdiction (“AHJs”) to increase competency and ensure best practices

² *Request for Information on Electromagnetic Fields (EMFs), Radiofrequency (RF) Radiation, and Wireless Radiation Exposure*, Department of Health and Human Services, Office of the Assistant Secretary for Health, Docket No. HHS-OASH-2026-0397, 91 Fed. Reg. 59792 (Sept. 21, 2026) (“EMF RFI”).

are implemented.³ SBC also conducts a national program of seminars for fire officials, building owners, engineers, and installers on in-building public safety communications.

SBC responds to this RFI as an organization representing public safety, building safety, and wireless infrastructure stakeholders. SBC does not offer scientific conclusions on the biological effects of RF energy and defers on those questions to the expert agencies and standards bodies responsible for them. SBC's comments address what SBC and its members know: how in-building wireless coverage is designed, built, paid for, and relied on in emergencies. Consistent with the RFI's instructions, these comments are based on government reports and statutes, fire and building codes, published industry data, and the field experience of SBC's members. Where SBC refers to an existing exposure framework, it is the framework administered by the FCC.⁴

SBC urges the Department to base any conclusions in this proceeding on robust, repeatable, peer-reviewed scientific evidence, and to weigh those conclusions against their consequences for first responders, building owners, and the public. The FCC, which administers federal RF exposure limits, has opened a parallel proceeding on these issues, and SBC encourages the Department to coordinate closely with it.⁵

³ See About the ERCES Handbook, Safer Buildings Coalition, <https://erceshandbook.com/pages/about-the-erces-handbook> (last visited Oct. 19, 2026).

⁴ 47 C.F.R. §§ 1.1307(b), 1.1310, 2.1091, 2.1093; *Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, ET Docket No. 93-62, Report and Order, 11 FCC Rcd 15123 (1996); *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields; Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies; Targeted Changes to the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields*, ET Docket Nos. 19-226, 13-84, 03-137, Resolution of Notice of Inquiry, Second Report and Order, Notice of Proposed Rulemaking, and Memorandum Opinion and Order, 34 FCC Rcd 11687 (2019) ("2019 RF Order"); see also *Environmental Health Trust v. FCC*, 9 F.4th 893 (D.C. Cir. 2021).

⁵ *FCC Seeks Comment on RF Exposure Issues Subject to D.C. Circuit Remand in Environmental Health Trust v. FCC*, ET Docket No. 13-84, Public Notice, DA 26-997 (rel. Sept. 17, 2026).

II. IN-BUILDING WIRELESS COVERAGE IS A CORNERSTONE OF EMERGENCY COMMUNICATIONS (QUESTION 18).

Americans spend about 90 percent of their time indoors,⁶ and an estimated 70 to 80 percent of wireless data use occurs indoors.⁷ About 80 percent of 911 calls are placed from wireless devices.⁸ Wireless connectivity inside buildings therefore supports advance warnings and alerts, enables the public to call and text 911, and allows first responders to communicate with each other once they are inside.

In-building wireless coverage serves two distinct but equally critical functions. First, cellular coverage allows building occupants to reach 911. Modern voice service now runs over the same broadband infrastructure as data service through Voice over LTE (“VoLTE”) and Voice over New Radio (“VoNR”), so the quality of indoor broadband coverage directly determines whether an indoor 911 call can be completed.⁹ Second, public safety radio coverage allows firefighters, police, and emergency medical personnel to communicate with each other and with command once they enter a building. When either fails, lives are put at risk—those of occupants trying to call for help and those of first responders working inside.

The building and public safety communities have recognized the importance of in-building coverage for decades. Beginning with its 2009 edition, the IFC has included requirements for emergency responder radio coverage in buildings, providing for the evaluation of in-building

⁶ Neil E. Klepeis et al., *The National Human Activity Pattern Survey (NHAPS): A Resource for Assessing Exposure to Environmental Pollutants*, 11 J. Exposure Sci. & Envtl. Epidemiology 231–252 (2001).

⁷ *US Mobile Data Traffic Stats Need Careful Scrutiny (Analyst Angle)*, RCR Wireless News (Oct. 14, 2024).

⁸ 9-1-1 Statistics, NENA: The 9-1-1 Association, <https://www.nena.org/page/911statistics> (last visited Oct. 19, 2026).

⁹ See US Mobile, *VoLTE and Why Is It Important?* (May 23, 2025); ng-voice, *What Is Voice over New Radio (VoNR)?*

signal levels and the installation of ERCES where signals are insufficient.¹⁰ The National Fire Protection Association’s requirements for these systems are now found in NFPA 1225, which sets minimum signal strength and coverage requirements, including heightened coverage in critical areas.¹¹ Building owners in jurisdictions that adopt these codes are legally required to provide and maintain this coverage.

Wireless technology is also increasingly built into building safety itself. Wireless-enabled personal emergency response and medical alert devices serve millions of Americans. In 2026, Virginia enacted a version of “Alyssa’s Law” permitting school boards to provide wearable panic alarm systems that can quickly and discreetly signal local 911 public safety answering points when an emergency is taking place.¹² Each of these depends on reliable wireless coverage inside the building.

III. IN-BUILDING COVERAGE DEPENDS ON WIRELESS INFRASTRUCTURE ENGINEERED TO EXISTING FEDERAL STANDARDS (QUESTIONS 5, 15, AND 18).

In-building coverage presents unique challenges because wireless signals weaken quickly with distance from the transmitting source and are easily blocked by building materials.¹³ Many energy-efficient building materials, such as low-emissivity glass and foil-backed insulation, use

¹⁰ International Code Council, International Fire Code § 510 (2009 ed.) (Emergency Responder Radio Coverage); *see also* ERCES Primer, When Is It Mandatory? Codes and Standards, Safer Buildings Coalition, <https://saferbuildings.org/erces-primer/> (last visited Oct. 19, 2026).

¹¹ National Fire Protection Association, NFPA 1225, Standard for Emergency Services Communications (2022 ed.).

¹² Va. Code Ann. § 22.1-79.4:1 (2026) (enacted by H.B. 592 (2026)).

¹³ 2019 RF Order, 34 FCC Rcd at 11720–21 ¶ 67 (“[S]ince exposure diminishes exponentially with increasing distance, signal losses occur due to non-line-of-sight conditions from distant sources, and separation from fixed sources is typically large, exposure from fixed RF sources is normally much less than the limit and contributes negligible exposure virtually all the time.”).

metallic layers that block radio signals as effectively as they block heat.¹⁴ As a result, signals from outdoor cell sites often cannot provide reliable coverage deep inside modern buildings.

In-building coverage is therefore delivered in several ways, often in combination: penetration of signals from outdoor macro cell sites; DAS for cellular and public safety radio; ERCES, including bi-directional amplifiers that extend public safety radio coverage indoors; indoor small cells; signal boosters; and Wi-Fi calling over building Wi-Fi networks. Every one of these approaches requires wireless infrastructure, and every one is designed, authorized, and installed to comply with FCC rules, including the FCC’s RF exposure requirements.¹⁵

This infrastructure is already in place on a large scale. The Wireless Infrastructure Association (“WIA”) reports more than 830,000 indoor small cell and DAS nodes in service in the United States at the end of 2025,¹⁶ and U.S. in-building wireless spending, excluding Wi-Fi, reached \$567 million in 2022 alone.¹⁷ Many thousands of additional Wi-Fi networks and public safety ERCES installations serve buildings nationwide. These systems were engineered according to established wireless engineering practice and the FCC’s existing RF exposure standards.

¹⁴ See, e.g., ERCES Primer, Safer Buildings Coalition, <https://saferbuildings.org/erces-primer/> (“Low-emissivity (‘low-E’) glass carries a micro-thin metallic coating that reflects heat and ultraviolet light. It also reflects radio waves—a double-pane low-E window can attenuate an 860 MHz signal by 23 to 38 dB. An eight-inch concrete wall attenuates the same signal by roughly 23 dB The more energy-efficient a building becomes, the more hostile it is to RF.”).

¹⁵ See, e.g., 47 C.F.R. § 20.21 (signal boosters operating on commercial wireless frequencies); 47 C.F.R. § 90.219 (signal boosters operating on private land mobile frequencies, including public safety frequencies); 47 C.F.R. §§ 1.1307(b), 1.1310, 2.1091, 2.1093 (RF exposure evaluation and limits).

¹⁶ Wireless Infrastructure Association, *Wireless Infrastructure by the Numbers: 2025 Key Statistics* (Mar. 18, 2026), <https://wia.org/wireless-infrastructure-by-the-numbers-2025-key-statistics/> (reporting 830,350 indoor small cell nodes, including distributed antenna systems, at the end of 2025). The figure counts nodes, not buildings or systems, and does not include Wi-Fi networks or public safety ERCES installations.

¹⁷ Wireless Infrastructure Association, *New Report: The U.S. In-Building Wireless Landscape* (May 2, 2023), <https://wia.org/new-report-the-u-s-in-building-wireless-landscape/> (reporting \$567 million in U.S. in-building wireless spending in 2022 on DAS, indoor small cells, and private LTE/5G networks, excluding Wi-Fi, of which nearly \$274 million was construction spending, and 747,400 indoor small cell nodes in operation at the end of 2022).

These systems represent a substantial investment. Based on the experience of SBC members, in-building systems typically cost from \$1 to \$5 or more per square foot, depending on the number of frequency bands, the number of carriers served, and the capacity and coverage design criteria.¹⁸ Public safety coverage designs are generally at the lower end of this range. High-capacity 5G systems using multiple-input, multiple-output (“MIMO”) antennas to deliver data rates measured in hundreds of megabits or gigabits per second can cost five to ten times more, in large part because they require greater antenna density. For a single 1,000,000-square-foot building, the in-building wireless system alone can represent \$1 million to \$5 million or more.

IV. CHANGES TO RF EXPOSURE LIMITS COULD FORCE COSTLY REDESIGN OF EXISTING SYSTEMS AND REDUCE COVERAGE (QUESTIONS 15 AND 18).

The number of antennas an in-building system requires depends on the capacity it must deliver and the power each antenna can radiate. Because indoor signals weaken rapidly with distance, a reduction in the power permitted per antenna requires a disproportionately larger number of antennas to cover the same space.¹⁹ Any regulatory change that materially reduces permissible antenna power, imposes minimum distances between antennas and occupants, or establishes setbacks from homes, schools, childcare facilities, or healthcare facilities would therefore drive up the cost of in-building coverage. Some commenters in this proceeding and in the FCC’s parallel proceeding have proposed exactly these measures.²⁰ Reductions in permissible

¹⁸ Cost ranges reflect the field experience of SBC members who design, install, and maintain in-building wireless systems. They are industry estimates, not the product of a formal study.

¹⁹ As an illustration: indoor signal strength commonly falls off with roughly the third to fourth power of distance. Assuming a path-loss exponent of 3.5, a 10 dB reduction in per-antenna power reduces each antenna’s coverage radius to about 52 percent, and its coverage area to about 27 percent, of the original—requiring roughly 3.7 times as many antennas to cover the same floor area.

²⁰ See generally comments filed in Docket No. HHS-OASH-2026-0397 and ET Docket No. 13-84.

device power would have a similar effect by weakening the signal a phone or radio can send from inside a building to the network.

For new deployments, such changes would raise costs. For existing deployments, they could render systems engineered in good faith to current standards incompatible with new limits, requiring complete redesign and, in many cases, the removal and replacement of entire systems. They could also place building owners in conflict with fire codes that require minimum public safety signal levels throughout their buildings.²¹ Owners could not lower power to meet a new exposure requirement without risking noncompliance with the fire code, or meet the fire code without adding substantial new infrastructure.

The total economic impact is difficult to calculate because no empirical record of in-building coverage exists in the United States. Published industry data, however, indicates the scale. WIA reports that the number of indoor nodes in service grew from 747,400 at the end of 2022 to 830,350 at the end of 2025, an average of about 27,650 new nodes per year, and that construction spending on in-building wireless systems was approximately \$274 million in 2022.²² Together, those figures imply a construction cost of roughly \$10,000 per node.²³ At that cost, if only 10 percent of the nodes now in service—approximately 83,000 nodes—required redesign or replacement, the cost would be approximately \$820 million, equivalent to about three years of national in-building wireless construction spending. That estimate does not include Wi-Fi

²¹ See, e.g., International Fire Code § 510.4.1 (2024 ed.); NFPA 1225, ch. 18 (2022 ed.).

²² See Wireless Infrastructure Association, *New Report: The U.S. In-Building Wireless Landscape*, *supra*; Wireless Infrastructure Association, *Wireless Infrastructure by the Numbers: 2025 Key Statistics*, *supra*.

²³ SBC estimate: \$274 million in 2022 construction spending divided by the average annual increase of 27,650 indoor nodes from the end of 2022 (747,400) to the end of 2025 (830,350) yields approximately \$9,900 per node. Construction spending also includes upgrades to existing systems, and the per-node figure is an average across systems of differing size and complexity.

networks or public safety ERCES, which WIA's figures exclude. Nor does it include the removal of existing equipment or the retesting and recertification of public safety coverage that fire codes require. That cost would fall on building owners and tenants, public safety agencies, and wireless carriers as an unfunded mandate driven by new federal requirements.

V. REGULATORY AND LEGISLATIVE FOCUS SHOULD BE DIRECTED AT ELIMINATING IN-BUILDING WIRELESS DEAD ZONES (QUESTIONS 9 AND 18).

Rather than burdening building owners and tenants, public safety agencies, and wireless carriers with the cost of redesigning large deployments of existing infrastructure, SBC believes regulatory and legislative focus would be better directed at eliminating in-building wireless dead zones. The stakes are measured in lives: the FCC has estimated that a one-minute reduction in emergency response times could save approximately 10,000 lives annually.²⁴

Federal law already requires the government to measure the availability of advanced telecommunications services. Section 706 of the Telecommunications Act of 1996 requires the FCC to determine annually whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.²⁵ The Broadband DATA Act requires the FCC to collect and publish maps of broadband availability, and requires mobile coverage maps to account for the effect of “clutter” on signal propagation.²⁶ These mapping efforts have informed

²⁴ *Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114, Third Further Notice of Proposed Rulemaking, 29 FCC Rcd 2374, ¶ 29 (2014) (FCC 14-13, rel. Feb. 21, 2014); *see also* 79 Fed. Reg. 17820, 17824 (Mar. 28, 2014) (“[A] one-minute reduction in response times would have resulted in an annual saving of 746 lives. If we assume that this outcome is reasonably reflective of the country as a whole, we estimate that the location accuracy improvements we propose could save approximately 10,120 lives annually . . .”).

²⁵ 47 U.S.C. § 1302(b); Broadband Data Improvement Act, Pub. L. No. 110-385, § 103(a), 122 Stat. 4096, 4096–97 (2008) (amending Section 706(b) of the Telecommunications Act of 1996 to require that the inquiry be conducted “annually”).

²⁶ Broadband Deployment Accuracy and Technological Availability Act, Pub. L. No. 116-130, 134 Stat. 228 (2020) (codified at 47 U.S.C. §§ 641–646); *see* 47 U.S.C. § 642(b)(2)(B) (mobile coverage maps must “take into

legislation and policy, including the allocation of federal broadband deployment funding,²⁷ and have created a roadmap for investment and economic development.

No comparable data exists for coverage inside buildings. The FCC’s mobile coverage maps model outdoor stationary and in-vehicle coverage, not coverage indoors where Americans spend most of their time and place most of their calls.²⁸ SBC has urged the FCC to address this gap through a National Indoor Wireless Coverage Map.²⁹ Giving the public, elected officials, building owners, and public safety agencies visibility into in-building coverage data, analogous to the broadband coverage data already required by law, would inform exactly the kinds of policy decisions this RFI contemplates. It would also allow building owners to make informed decisions about in-building investments, so that market forces can drive private investment to close the in-building coverage gap. In response to Question 9, SBC submits that information on in-building wireless coverage is among the most important technical information that could be disclosed to residents, schools, healthcare providers, and local governments.

Without that data, it is not possible to weigh the risks and benefits of changes to RF exposure limits against the very real prospect of degrading or dismantling existing in-building wireless coverage where time equals life.

consideration the effect of clutter”); 47 U.S.C. § 641(5) (defining “clutter” as “a natural or man-made surface feature that affects the propagation of a signal from a base station”).

²⁷ Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, § 60102, 135 Stat. 429 (2021) (codified at 47 U.S.C. § 1702) (allocating Broadband Equity, Access, and Deployment Program funding on the basis of the broadband maps created under the Broadband DATA Act).

²⁸ See *Establishing the Digital Opportunity Data Collection; Modernizing the FCC Form 477 Data Program*, WC Docket Nos. 19-195, 11-10, Second Report and Order and Third Further Notice of Proposed Rulemaking, 35 FCC Rcd 7460 (2020) (adopting mobile coverage reporting for outdoor stationary and in-vehicle conditions).

²⁹ Comments of the Safer Buildings Coalition, *Wireless E911 Location Accuracy Requirements*, PS Docket No. 07-114 (filed July 1, 2025); Comments of the Safer Buildings Coalition, *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 25-223 (filed Sept. 5, 2025).

VI. CONCLUSION AND RECOMMENDATIONS.

SBC is committed to the health and safety of Americans. For SBC, this means ensuring that 911 and emergency services are available where people spend most of their time—inside buildings. Public safety leadership is grounded in community risk reduction and the protection of life. A complete assessment of community health and welfare must therefore weigh the public safety benefits and costs of any policy change alongside its potential health effects. Policy changes that are not supported by established scientific evidence should not be permitted to diminish the proven public safety benefits that wireless connectivity provides to the public and to the first responders who protect them. SBC respectfully recommends that the Department:

1. Base any conclusions on robust, repeatable, peer-reviewed scientific evidence, and identify the existing federal and international exposure frameworks it relies on;
2. Evaluate the consequences for public safety communications, including code-required ERCES and in-building 911 coverage, before recommending any change to RF exposure limits, siting restrictions, or setbacks;
3. Preserve the regulatory certainty on which existing in-building wireless infrastructure was designed, financed, and built, and coordinate with the FCC in its parallel proceeding; and
4. Support the collection and publication of in-building wireless coverage data, analogous to the broadband coverage data already required by law, so that policymakers can weigh risks and benefits on the basis of evidence. Respectfully submitted,

John Foley
Managing Director
Safer Buildings Coalition
john.foley@saferbuildings.org

Alan Perdue
Executive Director

Safer Buildings Coalition
alan.perdue@saferbuildings.org

Seth Buechley
Ex Officio Board, Founder
Safer Buildings Coalition
seth.buechley@saferbuildings.org

October 21, 2026