Written Testimony of Jonathan Spalter
USTelecom President & CEO

Before the Senate Commerce Committee
Subcommittee on Telecommunications and Media

Hearing on "Intelligent Networks:
Powering Artificial Intelligence and Transforming Communications"

July 30, 2026

Chairman Fischer, Ranking Member Luján, and members of the subcommittee: thank you for the opportunity to appear before you today. I am Jonathan Spalter, President and CEO of USTelecom – The Broadband Association. Our members are the companies that build, own, operate, and defend the broadband networks that reach into nearly every community in this country, from the largest cities to the Nebraska Sandhills and the mesas of northern New Mexico.

I want to begin by suggesting a frame for how we think about AI. We have a habit, in the early years of any transformative technology, of treating it as a category of its own. We once spoke of "e-commerce" and "e-health" and "e-learning" – until they quietly became commerce, health care, and education. Artificial intelligence is on that same path, albeit fast-tracked. AI will not simply be a sector of our economy. It is going to become a layer, embedded in nearly everything: in agriculture, in logistics, in medicine, in manufacturing, in national defense, in the way a small business keeps its books and finds its customers. Artificial intelligence is not the biggest thing since the internet; it is the next, most powerful evolution of the internet itself.

Every serious account of the AI buildout now names three core ingredients: compute, energy, and connectivity. The first two dominate the headlines. The third – the networks that move the data – is the one that determines whether any of this progress reaches businesses, consumers, and government offices across America.

If I could leave this subcommittee with one primary contribution today, it is this: America's AI future and the future of our entire innovation economy runs through fiber broadband networks. Not alongside them. Not around them. Through them. Fiber is the foundation on which all next-generation connectivity depends. This includes satellite and wireless, which rely on fiber to move the massive amounts of AI-fueled data that help deliver the real-world benefits of the innovation emerging all around us – to communities throughout our nation.

The primary constraint on America's AI infrastructure is not technological.

It is governmental. Permitting is the single largest roadblock to delivering AI-ready connectivity in every community, and it is squarely within Congress's power to address this year.

Broadband providers are ready to build connections across this country, and we have the record to prove it. We have invested $2.2 trillion over the past 30 years, since the earliest days of the commercial internet. We directly employ roughly 570,000 Americans – engineers, data scientists, and cybersecurity specialists working alongside the field technicians who keep these networks running,[1] and we have decades of experience working with artificial intelligence to strengthen the reliability and efficiency of our networks.

Our task is to advance constructive solutions that allow us to work together, policymakers and the private sector, to connect every community. Whether a farmer in Custer County, a machine shop in Grand Island, or a nurse practitioner in the only clinic for sixty miles ever sees the benefit of any of this progress depends entirely on the power of the network at their door. So, I hope a central question for us is not who builds the computing, but whether every American will be connected well enough to use it.

I. Fiber Is the Foundation of the AI Economy

Let me start with the physical reality that underlies everything else: AI requires the continuous movement of massive amounts of data, and how much data can move is a function of the medium it moves through. No medium moves more than fiber. When a community competes to land an advanced manufacturing plant, when a regional health system builds out remote diagnostics, those demands rely on access to fiber. Fiber is the scalable backbone that every internet technology depends upon. It is, in the truest sense, the circulatory system of the American innovation economy.

Without question, every technology has an important role in the future we are shaping together. Fixed and mobile wireless and satellite serve real and important purposes – reaching the hardest-to-reach geographic areas, backfilling aging copper, connecting ships and aircraft, restoring service in the aftermath of a disaster. But fiber is the infrastructure foundation for our AI future.

A fiber optic strand is thinner than a human hair. Buried in the ground and built to last for decades, it has three distinct advantages.

- **Capacity that scales.** The fiber itself is not the limiting factor: capacity typically can be expanded simply by upgrading the electronics at either end, not digging back into the ground. So, the same fiber laid today can carry many times the traffic of today's internet, and stands most capable among all technologies to keep pace with what AI will demand tomorrow.
- **Backhaul.** Every other internet technology relies on fiber. 5G and 6G cell sites connect to fiber. Satellites land their traffic at ground stations that connect to fiber.
- **Latency.** The closer we get the fiber to the home or to the business, the faster and more capable that connection will be. On a video call, a few dozen milliseconds is invisible. For a robotic arm working beside a person on an assembly line, for a vehicle deciding whether to brake, for a surgical instrument guided from another hospital, timing is everything.

Putting fiber in the ground requires a skilled workforce – surveyors, trenching crews, splicers, and technicians who live in the communities they connect. These are jobs in your states: trenching crews in Nebraska, splicers in New Mexico, technicians in Minnesota, Illinois, Michigan, Wisconsin, Montana, and Ohio. Demand already outstrips supply. Industry analyses already project a shortfall approaching 180,000 skilled workers through the early 2030s.[2] Not every technology now competing for funding creates work of this kind, in our communities.

The same is true at the community level. As our nation works to bring the production of chips, routers, microprocessors and optical transceivers back to the United States, we know advanced manufacturing does not locate where the network does not reach. Reindustrialization and broadband deployment are the same project, and the rural communities competing for those facilities know it.

II. Making Sure Every American Can Participate

AI adoption is not just a "big tech" story. It is a Main Street story. The JPMorgan Chase Institute finds that 17.7 percent of small businesses had purchased an AI service in 2025, more than triple the share two years earlier. This is almost certainly an undercount, since it captures only direct payments, not the free or embedded tools many use today.[3] The U.S. Chamber puts generative AI use among small businesses at 58 percent, up from 23 percent in 2023.[4] The work is routine and practical – whether it's drafting the estimate or the marketing email, answering the customer who calls after hours, keeping the books, or flagging equipment that may be in need of maintenance.[5] Nearly two-thirds of foundations and nonprofits report using AI.[6] And 80 percent of small businesses say AI enhances their workforce, with 82 percent of those using it having grown their headcount over the past year.[7]

The opportunities created by these advances extend beyond the private sector. In New Mexico, a public university now uses AI across its admissions office – answering prospective students around the clock, in multiple languages, and freeing staff for person-to-person counseling work.

What unites the companies USTelecom represents is a commitment to connect every community to the best technology we can get to them. That is why we are such large investors ourselves in the nation's broadband infrastructure, and why we have worked with this body on programs like BEAD that can bridge the cost gap where private capital alone cannot reach remote areas. The communities with the most to gain from AI are very often the ones where the economics are toughest. Which is the heart of the matter: the places where private capital struggles hardest are the places where your leverage is greatest. To those communities, a permit granted in 90 days instead of three years is worth more than any promise the rest of us can make them.

III. Broadband Companies Have Been Using AI in Our Networks for Decades

The Subcommittee asked how the communications sector is using AI tools to run networks more efficiently, anticipate outages, and defend against cyberattacks. The industry's experience here is not new. As far back as the 1980s, telephone companies deployed rule-based "expert systems" for fault management – flagging when something on the network failed, isolating the cause, and clearing it. Machine learning followed, for call routing, predictive monitoring, and fraud detection. Today our networks can increasingly diagnose and fix themselves, and some

carriers now train AI models on their own networks, so the system learns the quirks of that particular network the way a seasoned engineer learns the one she has run for years – except across millions of readings at once, continuously, and without ever looking away. These are not hypotheticals: One major broadband provider reports making roughly 700,000 changes to its network every day with AI, using a foundation model built for its own network. Another now runs some 200 edge computing centers that automatically resolve more than three-quarters of network events before a customer is affected, locating faults with better than 99 percent precision.[8]

Network efficiency. Demand fluctuates enormously across a single day – the morning surge as a region logs on, the evening crest of video streaming, a stadium that fills on a Saturday. AI systems proactively watch the network in real time and steer traffic around congestion, dynamically allocating capacity where it is needed most. The same systems increasingly anticipate outages before they happen. This is the shift from reactive repair to predictive resilience. AI models can identify the small anomalies that precede a failure – a degraded optical signal, an irregular power draw, a component drifting out of alignment – so a provider can dispatch a technician or reroute traffic before customers are affected. The outage that never happens is invisible to the public. It is one of the most valuable things AI does in our networks. The same logic scales up to disasters: Leading broadband providers use AI to model approaching hurricanes to predict which assets are most likely to be hit, so crews, generators, and portable capacity can be positioned before landfall.

Cybersecurity. Our broadband sector is keenly aware that America's adversaries are using this same technology to attack our infrastructure at greater speed and scale. That is why USTelecom is a contributor to the National Institute of Standards and Technology's work on AI as part of its Cybersecurity Framework. This is a dynamic, industry-informed approach where policy leaders and broadband experts roll up their sleeves together on the kinds of solutions these complex challenges call for.[9]

Network engineers now work alongside AI agents that read the flood of alarms coming off the network, pinpoint the real problem, open a ticket, propose a fix, and write the incident summary. These capabilities run in parts of our members' networks, not yet across all of them, and extending them takes expanding our fiber capacity, which again brings us back to permits.

IV. AI Is Changing the Shape of Network Traffic

As we look at the growth in network traffic attributable to AI, the volume is striking. Consumer network traffic is forecast to run roughly 6.6 times higher by 2035, with AI the dominant driver of growth. Agentic AI for enterprise is expected to bend the curve even more steeply, powering a 9fold expansion in related traffic by 2035.[10]

Of course, ten years from now might as well be a century, given how quickly the landscape is evolving. The pace is already visible: this June, for the first time in the history of the internet, automated systems generated more search requests than human beings – 57.4 percent from bots and AI agents, against 42.6 percent from people.[11] Experts can differ in good faith on the precise forecasts, but the more consequential change gets less attention: AI is not simply

increasing the volume of network traffic. It is changing the shape of it. And the shape must determine what we build, and where.

- **Traffic is reversing direction.** Two terms are important to understand: upstream is everything traveling toward the computing – the prompt, the photograph, the sensor reading; downstream is everything coming back – the answer, the diagnosis, the instruction. For 30 years the internet has been engineered overwhelmingly for downstream. Picture a freeway built with eight lanes running into town and two running out. That is what was needed to meet the network demands of video streaming. But AI inverts the flow, pushing enormous volumes of data back upstream: rich prompts, video, sensor and lidar feeds that allow machines to register their surroundings. As an example, a single connected vehicle generates roughly 20 gigabytes of data per day.[12] This is roughly 30 times what the average mobile customer consumes, and it flows in the direction most network technologies – copper, coaxial cable, wireless, satellite – were least designed to carry. Fiber is the exception: the same, high-capacity lanes in both directions.
- **Traffic is becoming "bursty" and machine-driven.** An AI agent does not browse the way a person does. A person loads a page, reads, thinks, clicks. An agent fires off dozens of requests in a second, goes quiet, then does it again – short, intense spikes rather than a steady stream, and a network sized for the steady stream is generally not sized for the spike. Cisco finds a 450 percent increase in traffic when a task is executed by an AI agent rather than a human.[13] An AI chatbot says, "Here is an answer." An AI agent says, "Here is the plan, and I will carry it out step by step." Every one of those steps is traffic.
- **Traffic is becoming intolerant of delay – and geographically distributed.** This is the change that most directly implicates federal policy. There are machines acting in the physical world, on a deadline. A traffic camera using AI to prevent a collision cannot wait for a round trip to a server several states away. An autonomous system on a factory floor has no margin for a lagging signal. These applications require computing and connectivity close to where the work is happening. And that means more fiber, deeper into more places, to directly support communities and to support the wireless, satellite and other connectivity options that ride on it.

The defining infrastructure challenge of the AI era is not simply how much we build. It is where, with what, and how fast. Latency is a function of distance, and distance is a function of geography. You close it by building closer to the user – which means opening a trench, crossing a right-of-way, filing a permit. Thousands of times, in thousands of jurisdictions. Simply put, the physics of AI turns a computing challenge into a permitting challenge. And, that's a problem we can solve today.

V. The Broadband Community Is Doing Its Part

Consider the scale of what private capital has already built: $2.2 trillion invested by broadband companies since 1996, and $89.6 billion in 2024 alone[14] with 2025 expected to be higher still – sustained through recessions, higher interest rates, and a cautious capital environment. To put that in context, Congress committed $42.45 billion for BEAD, the largest federal broadband infrastructure program in U.S. history. It is designed to fill a critical gap: connecting the

communities that cannot otherwise be reached, where the cost of building broadband networks exceeds any realistic private return. Roughly half of BEAD funds, about $21 billion, are going to deployment. This is about one percent of the private capital the industry has invested since 1996. America's digital infrastructure is overwhelmingly privately financed, and it was built because both parties, across many administrations, sustained a pro-investment posture: stable rules, predictable policy, and a settled preference for building.

VI. The Limiting Factor Is Government, Not Technology

Broadband providers are ready to build. What stands in the way is a permitting system designed for a different era, and a problem that is often misdiagnosed. Our difficulty is rarely an outright "no" from a permitting authority. Our primary difficulty is the absence of an answer. It is delay. Running out the clock – through a construction season, through a grant deadline, through a community's patience – until the project is more expensive or abandoned. Among our members' experiences:

- **Illinois.** A provider may hold only one active permit at a time; each must be closed out before the next is released.
- **Maryland.** A city stalled a provider's effort to install a small fiber hut for nearly a year by requiring an extensive zoning review typically reserved for large commercial developments.
- **Minnesota.** A city demanded a $63,000 permit fee plus nearly $29,000 in per-foot charges for a single block of fiber. When it refused a compromise, the provider had to walk away.
- **Hawaii.** The legislature enacted a 60-day broadband shot clock nearly a decade ago. Not a single permit has ever been processed in that timeframe.
- **Ohio.** One town simply ignored a provider's application. The deployment was abandoned.
- **Montana.** A member received a federal grant in June 2023 and, two years later, had not turned a single shovel of dirt – waiting on permits.
- **The Mountain West.** One provider waited three years for a permit in an area with a six-week annual construction window, narrowed by weather, terrain, and protected-species breeding seasons. By the time the permit arrived, the season had closed.
- **Federal lands.** Permitting can take up to four years. One member was made to conduct a fresh environmental review of a corridor that already held a telephone line, power and natural gas lines, and a county road – land previously disturbed and previously analyzed.
- **Big Bend National Park.** A member waited two years to bring fiber to homes and businesses inside the park, held up in DC by a required review of forest resources. The problem? Big Bend sits in the Chihuahuan Desert. There is no forest.
- **Railroads.** It is nearly impossible for a fiber deployment not to be stopped in its tracks by a railroad demanding fees that bear no relation to cost to bore or cross under a railroad. Congress, and this committee, should pass the RAIL Act to put in place common-sense rules that preserve safety for railroads while limiting the delays that serve no safety purpose.

Permitting officials are doing important work, most of them under resourced. And when the rules are clear and followed, communities win. This leads to my most important point: We are not speculating about whether permitting reform works. We know that it does.

- In 2018, as part of the same legislative push that cleared the runway for 5G, Congress required federal agencies to grant or deny communications permits on federal land within 270 days.[15] Where agencies kept reliable records, the Government Accountability Office found average processing time fell by 57 percent between 2018 and 2022. GAO's other finding is just as important: the Bureau of Land Management could not reliably determine its own processing time for 42 percent of applications.[16] Congress set the deadline. Some agencies still cannot confirm they are meeting it. Both halves need fixing – and the CLOSE THE GAP Act would do just that.
- Also in 2018, the FCC adopted shot clocks and cost-based fee caps for small wireless facilities to more densely cover a neighborhood, a corridor, a stadium. Small-cell deployment then grew by 110 percent.[17] This resulting densification is what turned 5G into the powerful network Americans now carry in their pockets. Importantly, the FCC today is working to advance a similar approach to streamline permitting for wired networks.
- More recently, state Broadband Ready Community certifications for towns and counties that commit to a single point of contact, a firm review deadline, and reasonable, cost-based fees have demonstrated something important: faster reviews and reasonable fees do not cost communities anything. They signal to providers that a community is open for business. More than 280 towns, cities, and counties across Georgia, Indiana, Tennessee, and Wisconsin have adopted these certifications.

The Subcommittee will notice that some of these reforms date to 2018 – and that is no accident. They were built for wireless: for the small-cell densification that made 5G possible. Nothing on the same scale has ever been done for wireline. The playbook exists. It worked once. It has simply never been applied to the infrastructure that matters most today.

Every delay is a constituent community that waits. And every delayed broadband build is a delay in strengthening America's AI infrastructure. Computation without connectivity reaches only those who can afford to build their own onramps. Our job, and yours, is to make sure it reaches everyone else, too.

VII. What We Ask of Congress

1. **Pass the CLOSE THE GAP Act (S. 4561).** Introduced by Senators Barrasso and Lummis, this bill goes directly at the federal-lands bottleneck: it streamlines agency permitting regulations for broadband and exempts previously permitted and previously analyzed land from duplicative review. The communities waiting on the far side of a four-year permit are found in New Mexico as surely as in Wyoming, Montana, and Nebraska. It is targeted, it is sensible, and it is ready.[18]

2. **Pass the Broadband and Telecommunications RAIL Act (S. 3268).** Introduced by Senators Blackburn and Luján, this bill goes directly at the railroad-crossing bottleneck: it sets enforceable timelines for railroads to respond to and schedule crossing work, reins in the

arbitrary fees that can run into the tens of thousands of dollars for a single crossing, narrows the grounds for denial to genuine questions of safety and railroad operations, and gives the FCC a role in resolving disputes. It does all of this while preserving the safety standards that rail carriers rightly require, since providers must still submit engineering plans and coordinate closely with the railroads. The bottleneck here is not safety. It is a permit that can sit unanswered for the better part of two years while the town on the far side of the tracks waits for service.[19]

3. **Pass the Accelerating Broadband Permits Act (S. 4448).** Introduced by Senators Thune, Luján, and Barrasso, this bill goes directly at the accountability bottleneck. It cuts duplicative red tape in agency review and brings transparency to where an application sits in the process. Congress set that deadline in 2018. GAO reported in 2024 that agencies were still missing it. A deadline without a mechanism is only a suggestion, and the households waiting on an unanswered file are in South Dakota and New Mexico as surely as in Wyoming and Nebraska.

4. **Reauthorize CISA 2015.** Finally, to ensure the safety and security of the networks we build, it is imperative that Congress reauthorize CISA 2015 so that we can continue to safely, quickly, and effectively share information across our industry and with our government partners.

Conclusion

Chair Fischer, Ranking Member Luján: at the end of all of this are families in small towns across the country who want to know what any of it means for them – for their quality of life, for their kids, for the cost of running their business. The honest answer is that everything we have described arrives in their lives only if there is a network at their door capable of delivering it.

America's broadband providers have built these networks across a generation, at a scale few industries can match, and we are ready to keep building. We are not asking Congress to build them for us. We are asking you to clear the path – and, where the economics will not reach, to keep the federal partnership strong enough to finish the job.

The gateway is government. The levers that remain are the ones you hold. Pull them, and the powerful modern networks through which America's future transits will be built faster than anyone expects – and every community will be on the other end of the opportunities they make possible.

Thank you. I look forward to your questions.

[1] U.S. Bureau of Labor Statistics, Current Employment Statistics: Wired and Wireless Telecommunications Carriers (Except Satellite), NAICS 517111 (2024). This figure reflects broadband providers' direct employees; it excludes the construction and contractor trades that build and maintain networks, as well as satellite carriers.

[2] Patience Haggin, "High-Speed Internet Boom Hits Low-Tech Snag: A Labor Shortage," Wall Street Journal, February 1, 2026, https://www.wsj.com/business/telecom/high-speed-internet-boom-hits-low-tech-snag-a-labor-shortage9c92b514

[3] JPMorganChase Institute, Understanding AI Use by Small Businesses (2026), https://www.jpmorganchase.com/institute/all-topics/business-growth-and-entrepreneurship/understanding-ai-use-bysmall-businesses.

[4] U.S. Chamber of Commerce, Empowering Small Business: The Impact of Technology on U.S. Small Business (2025), https://www.uschamber.com/technology/empowering-small-business-the-impact-of-technology-on-u-s-small-business. [5] U.S. Chamber of Commerce Foundation, AI in Action: Early Lessons from Small Businesses on the Front Lines of Adoption (2026), https://www.hiringourheroes.org/resources/ai-in-action-whitepaper/.

[6] Center for Effective Philanthropy, AI With Purpose: How Foundations and Nonprofits Are Thinking About and Using Artificial Intelligence (2025), https://cep.org/report-backpacks/ai-with-purpose-how-foundations-and-nonprofits-arethinking-about-and-using-artificial-intelligence/

[7] Goldman Sachs small business survey, as reported in Fox Business (August 8, 2025), https://www.foxbusiness.com/economy/small-business-ai-adoption-jumps-68-owners-plan-significant-workforcegrowth-2025; U.S. Chamber of Commerce, Empowering Small Business: The Impact of Technology on U.S. Small Business, supra note 4.

[8] Phil Harvey, "The AI-Enabled Network Is Here. The Pitch Is Stuck in Traffic," Light Reading (May 29, 2026), https://www.lightreading.com/ai-machine-learning/the-ai-enabled-network-is-here-the-pitch-is-stuck-in-traffic [9] See National Institute of Standards and Technology, Cybersecurity Framework Profile for Artificial Intelligence (Cyber AI Profile): NIST Community Profile, NIST IR 8596, initial preliminary draft (December 2025), https://csrc.nist.gov/pubs/ir/8596/iprd.

[10] Cisco, AI Impact on Wide Area Networks (2026), https://www.cisco.com/c/dam/en/us/solutions/collateral/artificialintelligence/mass-scale-infrastructure/ai-network-traffic-report.pdf.

[11] Cloudflare data reported, NBC News, Bot Web Traffic Has Overtaken Human Web Traffic, Data Shows (June 3, 2026), https://www.nbcnews.com/tech/tech-news/bot-web-traffic-overtaken-human-web-traffic-data-showsrcna348522.

[12] U.S. Department of Transportation, Federal Highway Administration, Maricopa Association of Governments Finds Value in Connected Car Data, Crowdsourcing for Operations Case Study, FHWA-HOP-22-047 (2022), https://www.fhwa.dot.gov/innovation/everydaycounts/edc_6/docs/crowdsourcing_mag_case_study.pdf [13] Cisco, AI Impact on Wide Area Networks (2026), supra note 10.

[14] USTelecom, 2024 Broadband Capex Report (October 21, 2025), https://ustelecom.org/research/2024-broadbandcapex-report/.

[15] Consolidated Appropriations Act, 2018, Pub. L. No. 115-141, div. P, tit. VI (MOBILE NOW Act), § 606 (establishing timelines for federal agency action on communications facility siting applications on federal property). [16] U.S. Government Accountability Office, Broadband: Agencies Should Improve Data Reliability and Coordination for Permitting on Federal Lands, GAO-24-106157 (2024), https://www.gao.gov/products/gao-24-106157.

[17] Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment, Declaratory Ruling and Third Report and Order, WT Docket No. 17-79, 33 FCC Rcd 9088 (2018); CTIA, 2025 Annual Survey Highlights at 7 (2025), https://api.ctia.org/wp-content/uploads/2025/09/2025-Annual-Survey-Highlights.pdf. [18] CLOSE THE GAP Act, S. 4561, 119th Cong. (2026) (introduced by Sen. Barrasso, cosponsored by Sen. Lummis), https://www.congress.gov/bill/119th-congress/senate-bill/4561.

[19] Broadband and Telecommunications RAIL Act, S.3268, 119th Cong. (2026) (introduced by Sen. Blackburn, cosponsored by Sen. Lujan), https://www.congress.gov/bill/119th-congress/senate-bill/3268.