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**Measuring the Value of Delayed Broadband Deployment:
Why the FCC’s Focus on Permit Reform Matters**

by

Joseph V. Kennedy *

I. Introduction

The quality of modern life depends on the size and quality of key infrastructure networks such as the highway system, mail and package delivery, financial institutions, and electricity. Perhaps the most important of these infrastructure networks, in part because almost every other delivery or transportation system depends at least partially on them, are reliable, secure, high-speed broadband networks. Investments in broadband networks have a direct positive effect on economic activity and an indirect effect on innovation in key market segments, such as health and education. As a result, efforts to speed broadband deployment have a major positive effect on living standards. Concomitantly, unnecessary delays impeding broadband deployments have negative effects.

As part of its broader efforts to reform regulations, the FCC has initiated two important proceedings to eliminate unnecessary delays in broadband deployment imposed by state and local governments. These include a Notice of Inquiry¹ focused on eliminating barriers to wireline deployments and a

¹ FCC Notice of Inquiry, “Build America: Eliminating Barriers to Wireline Deployments,” Released on September 30, 2025, WC Docket No. 25-253, <https://docs.fcc.gov/public/attachments/FCC-25-66A1.pdf>.

Notice of Proposed Rulemaking² for wireless deployments. While no quantitative studies have been published on these particular proposals, a considerable body of existing research on broadband deployments shows that delays have a major negative effect on economic activity and consumer welfare. It is therefore safe to anticipate that the elimination of unnecessary delays, including those imposed at the state and local level at which the FCC's current efforts are directed, will have a significant positive effect on the economy and living standards.

What form do these delays take? What are some of the proposed reforms? Most importantly, what is the economic cost of these delays or, put another way, how large is the economic benefit of ending them? This Free State Foundation *Perspectives* answers some of these questions.

This paper starts by discussing the FCC's two major regulatory efforts. It describes some of the common delays to the deployment of broadband imposed by state and local governments. It then reviews the types of costs that these delays impose. The majority of the paper looks at previous efforts to quantify these costs. No direct quantitative studies on the state and local permitting process exist. Nevertheless, a number of studies have tried to quantify the cost of delays other than those imposed by state and local governments. These studies uniformly show that broadband deployment creates significant economic benefits and that delays therefore impose significant costs.

The ongoing expansion of broadband's reach and capabilities is an economic imperative. Many localities are already under pressure to increase coverage and capacity. According to CTIA's Annual Survey Highlights, there has been a rapid increase in usage. Americans used 132.5 terabytes of data in 2024, up roughly 100 trillion from 2023. 2024 was the third year in which growth in usage increased by roughly 35 percent. The mobile industry invested over \$30 billion annually over the last decade in building, upgrading, and maintaining their wireless networks. Forty percent of new connections were to 5G devices, up from only 3% in 2020. Finally, 15,000 new cell towers were added in 2024, partly due to FCC reforms to state and local permitting for small cells. The report found that "The FCC and states have the opportunity to further modernize laws and processes that govern siting of wireless facilities, helping to expedite further investment."³

II. Current Commission Efforts at Reform

The FCC has made regulatory reform a central goal of its policy. Its "Delete, Delete, Delete" initiative seeks to identify and remove outdated, redundant or burdensome rules. It has already identified 396 rule provisions and parts that no longer serve the public interest.⁴ As part of this program it is conducting two efforts that concentrate specifically on the permitting process of state and local governments. On September 30, 2025 the FCC issued a Notice of Inquiry regarding

² FCC, "Build America: Eliminating Barriers to Wireless Deployments," *Federal Register*, December 1, 2015, WT Docket No. 25-276, <https://www.federalregister.gov/documents/2025/12/01/2025-21620/build-america-eliminating-barriers-to-wireless-deployments>.

³ CTIA, "2025 Annual Survey Highlights," <https://www.ctia.org/news/2025-annual-survey-highlights>.

⁴ FCC, "Delete, Delete, Delete: Removal of Obsolete Regulations," *Federal Register*, December 12, 2025, GN Docket No. 25-77, <https://www.federalregister.gov/documents/2025/12/12/2025-22633/delete-delete-delete-removal-of-obsolete-regulations>.

wireline deployments.⁵ On December 1, 2025 the Commission published a Notice of Proposed Rulemaking pertaining to wireless deployments.⁶

III. The FCC’s Small Cell Rulemaking

In 2018 the FCC implemented new rules to speed the deployment of small cells. The effect was to accelerate the deployment of this equipment. Nationwide, the number of small cells grew 110 percent after the Commission’s regulatory permitting reforms were adopted.

The importance of these mobile networks extends far beyond playing video games and scrolling through TicTok. In a response to the Commission’s proposed rule on wireless systems, T-Mobile notes that the wireless networks “support more than just daily home and work communications. They provide essential connectivity for public safety, healthcare, manufacturing, transportation, commerce, education, and other [] critical use cases. They help maintain U.S. leadership in wireless technology, which is important for national security.”⁷ The same holds true for fixed networks.

The Commission’s *Small Cell Order* included a number of specific reforms: fees must reasonably approximate costs; processing must occur within reasonable time frames and be subject to shot clocks; aesthetic requirements must be reasonable, objective, and published in advance; and unrelated permit conditions should be prohibited. Because these same policies are central to the FCC’s current efforts to speed the permitting process, their adoption should have similar effects. The Commission should therefore extend these regulatory relief reforms to larger projects.

IV. Types of Delay

State and local governments can use a variety of demands to impose unnecessary requirements that delay provider access to the government rights-of-way (ROW) and permissions needed to install equipment. It is important to note that government officials may see the benefit of additional deployment but may want to delay it in order to increase their bargaining power with respect to other goals such as financial payments, construction of other infrastructure, and excessive concerns about aesthetics and health.

Comments by proponents of the FCC’s efforts list a large number of specific conditions companies have faced in order to obtain agency permits.⁸ General sources of delay –and the adverse impacts they create – include:

⁵ FCC Notice of Inquiry, “Build America: Eliminating Barriers to Wireline Deployments,” Released on September 30, 2025, WC Docket No. 25-253, <https://docs.fcc.gov/public/attachments/FCC-25-66A1.pdf>.

⁶ FCC, “Build America: Eliminating Barriers to Wireless Deployments,” *Federal Register*, December 1, 2015, WT Docket No. 25-276, <https://www.federalregister.gov/documents/2025/12/01/2025-21620/build-america-eliminating-barriers-to-wireless-deployments>.

⁷ Comments of T-Mobile, “Build America: Eliminating Barriers to Wireless Deployments, December 31, 2025, WT Docket No. 25-276, <https://www.fcc.gov/ecfs/document/123176705438/1>.

⁸ Reply Comments of NTCA, “Build America: Eliminating Barriers to Wireline Deployment,” December 18, 2025, WT Docket 25-253, <https://www.fcc.gov/ecfs/document/121880905091/1>; Comments of USTelecom, “Build America: Eliminating Barriers to Wireline Deployment,” November 18, 2025, WT Docket 25-253, <https://www.fcc.gov/ecfs/document/1118029117501/1>; Comments of CTIA, “Build America: Eliminating Barriers to Wireless Deployments,” December 31, 2025, WT Docket 25-276, <https://www.fcc.gov/ecfs/document/12312417000463/1>; Comments of INCOMPAS, “Build America: Eliminating

- Lengthy permitting processes and delayed access to ROWs. These increase the time needed to start or complete a project.
- High and unpredictable fees. These directly affect the return on investment and make planning difficult.
- Conflicting approvals across municipalities and states. Investments sometimes cross jurisdictions, making the process more complicated and conflicts more likely.

Lengthy permit processes were one of four major challenges to broadband deployment that industry stakeholders identified to the Department of Commerce Office of the Inspector General (OIG). According to the OIG report: “Industry stakeholders said requesting permits from multiple federal, state, tribal, and local governments can be time consuming, in some instances with a wait time of 2 years or more.”⁹ Federal agencies can also be a source of delay. A separate report by the Government Accountability Office found that between 2018 and 2022 the Bureau of Land Management and the Forest Service lacked sufficiently reliable data to determine whether they were meeting the statutory requirement of 270 days to process applications from telecommunications providers to install communications on federal land.¹⁰ Given that these other challenges may be more difficult to control, the importance of dealing with those that we can control, such as permitting, becomes more important.

V. The Economic Costs of Delay

Measuring the cost of restrictive rules can be difficult because not all actions are monetized. Instead of imposing a fee or forbidding deployment, cities and states can impose more ambiguous conditions not easily reduced to a specific dollar amount. Nevertheless, “[w]hen regulatory requirements materially increase the cost, risk, or time associated with deployment, they can deter investment even if they do not formally prohibit it.”¹¹

The economic cost of delaying deployment also takes a variety of forms. These include:

- Higher capital expenditures as equipment and resources sit idle rather than building communications systems.
- Lost revenue and slower deployments. This directly affects provider income. Providers have reported that cumbersome reviews have deterred participation in broadband funding programs like the Broadband Equity, Access, and Deployment (BEAD) Program and ReConnect.
- Opportunity costs for delays in imposing new technology. Broadband is a source of constant innovation. It also enables innovation in other industries.

Barriers to Wireline Deployments,” November 18, 2025, WT Docket 25-253, <https://www.fcc.gov/ecfs/document/1119310004781/2>.

⁹ Department of Commerce, Office of the Inspector General, “Broadband Stakeholders Identified Various Challenges Affecting Broadband Deployment,” Final Report No. OIG-25-014-1, https://www.oig.doc.gov/wp-content/OIGPublications/OIG-25-014-I-SECURED-Final-Report.pdf?utm_source=chatgpt.com.

¹⁰ GAO, “Broadband Deployment: Agencies Should Take Steps to Better Meet Deadline for Processing Permits,” April 2024, Report No. GAO-24-106157, <https://www.gao.gov/products/gao-24-106157>.

¹¹ Comments of CPAC Foundation Center for Regulatory Freedom, “Build America: Eliminating Barriers to Wireless Deployments,” December 30, 2025, WT Docket No. 25-276, <https://www.fcc.gov/ecfs/document/12302708830692/1>.

- Reduced social welfare as both consumers and providers miss out on the benefits of having broadband systems. This can be especially costly given broadband’s positive effect on consumer welfare and economic activity. Delaying its rollout imposes large costs on the broader public.

VI. Studies Demonstrating the Cost of Delaying Broadband Coverage

Unfortunately, the literature quantifying costs due solely to delay is limited. This is partially because projects differ by location, technology, and project. Nevertheless, some forms of cost are easy to identify, if not to quantify. The first is the increased capital and administrative costs mentioned above. Delays raise the cost of labor and financing and require spending on legal and planning personnel.

Luckily, some studies have been done. In August of this year, the FCC requested information on modernizing its National Environmental Policy Act rules.¹² A recent study on the additional costs of environmental laws concluded that: “[T]he current permitting process adds unnecessary costs for wireless infrastructure and service providers and delays the deployment of higher-capacity networks and innovative services in the United States.”¹³ The study estimates that complying with the reporting requirements of the two Acts will cost \$7.5 billion over 10 years. The findings support the FCC’s current efforts to streamline its regulations and reduce unnecessary delays in state and local deployment efforts. The study concentrates on the costs to outdoor wireless providers imposed by the National Environmental Policy Act (NEPA) and the National Historical Preservation Act (NHPA). It found a general lack of data on the costs of complying with these Acts and therefore used surveys and working sessions with major wireless providers to generate data.

The study estimated total costs of \$7.5 billion in reduced welfare and lower economic activity over the next decade. The costs include outdated requirements that raise prices, the deterrence of new mobile wireless network investments, delays in service deployment in rural areas, and an inefficient allocation of resources away from deployment and toward environmental concerns.

This \$7.5 billion consisted of four sources. Regulatory compliance cost \$2.2 billion. This was projected to rise significantly over the next decade. Out-of-pocket expenses added another \$4.0 billion. Finally, environmental requirements also added an average of five months to new deployments of technology and upgrades, adding another \$1.3 billion to the total cost. Significantly, the study did not estimate the opportunity costs of diverting resources into less valuable projects. These costs varied significantly between projects. For example, NEPA assessments ranged from \$100 to \$5,500. The average cost for an environmental assessment was \$15,500.

A 2023 study looked at a specific source of delay in spectrum allocation. The prior year the FCC offered approximately 8,000 flexible-use county-based licenses for white spaces in the 2.5 GHz band.¹⁴ However, ten months later the FCC had still failed to distribute the vast majority of the

¹² FCC, “Modernizing the Commission’s National Environmental Policy Act Rules,” WT Docket No. 25-217, (Released August 14, 2025), <https://docs.fcc.gov/public/attachments/FCC-25-47A1.pdf>.

¹³ Christian M. Dippon and Claire Huther, “Quantifying the Opportunity of Reforming the Federal Communications Commission’s National Environmental Policy Act and National Historical Preservation Act Rules,” NERA, January 2026, https://api.ctia.org/wp-content/uploads/2026/01/Dippon_NEPA_NHPA_Reform_Final.pdf.

¹⁴ Coleman Bazelon and Paroma Sanyal, “Economic Impact of Delaying the Deployment of Auction of 108 2.5 GHz Licenses,” The Brattle Group, June 22, 2023, https://www.brattle.com/wp-content/uploads/2023/07/Economic-Impact-of-Delaying-the-Deployment-of-Auction-108-2.5-GHz-Licenses_v3.pdf?utm_source=chatgpt.com.

auctioned licenses. The report estimated the cost of that delay, finding that the spectrum that could immediately be put to use would generate about \$28 billion in consumer welfare. Including spectrum that would require new radios and towers would raise the generated welfare amount to \$42 billion. Through June 2023 the regulatory delay had already cost Americans \$1.3 billion in lost value. An additional one-year delay would increase the loss to \$3 billion. Meanwhile approximately 17,000 jobs, including 6,500 wireless industry jobs, were put on hold until the licenses were issued.

Given the centrality of the Internet as a communication system, it should not be surprising that delays have productivity effects on the general economy, including GDP. A 2025 article looked at 32 countries from the Organization for Economic Co-operation and Development between 2002-2020.¹⁵ The results showed that both fixed and mobile broadband adoption exert a substantial and significant impact on GDP, although the effect of mobile was about three times higher than fixed-line. For example, a 1% increase in *mobile* broadband adoption raised GDP per capita between 0.092% to 0.102%. An increase in *fixed* broadband adoption rose GDP per capita growth between 0.026% to 0.034%.

In 2024 the Brattle Group issued a new study looking at the economic impact of deploying fiber to the home.¹⁶ The study estimated that 56 million households are in areas not served by fiber. Connecting to these homes could generate economic impacts having a net present value of at least \$3.2 trillion. The increase in value takes a variety of forms. Housing values could rise by \$1.64 trillion in net present value, increasing average house values by 14% to 17%. Income is estimated to rise by \$1.6 trillion in net present value, 85% of it in non-urban areas. Fiber expansion could also create over 380,000 new jobs. Finally, the authors also find that fiber deployment improves educational outcomes, reduces health costs, and accelerates technology adoption.

The literature also contains several studies looking at the effect of other changes in broadband adoption. A study in England found that between 2011-2015, on average a one percentage increase in download speeds was associated with a 0.0574 percentage point increase in the annual growth rate of business establishments.¹⁷ The primary hypothesized mechanism behind the estimated relationship is the enabling effect that faster broadband speeds have on innovative business models based on new digital technologies and services.

An older paper by the Mercatus Institute looked at the net benefits of a large number of telecommunication rules. It found that telecommunications regulation usually creates large costs for both consumers and society by distorting prices and reducing competition. According to the author, regulation costs consumers up to \$105 billion annually in higher prices and forgone services."¹⁸ Seventy-seven billion of this cost is due to spectrum management.

¹⁵ Wolfgang Briglauer et al., "Economic Benefits of New Broadband Network Coverage and Service Adoption: Evidence from OECD Member States." *Industrial and Corporate Change*, Vol. 34 Issue 4, August 2025, <https://doi.org/10.1093/icc/dtae043>.

¹⁶ Paroma Sanyal et al., "Economic Benefits of Fiber Deployment," The Brattle Group, November 20, 2024, <https://fiberbroadband.org/wp-content/uploads/2024/11/2024.11.20-Benefits-of-Fiber-Deployment-Brattle-FINAL.pdf>.

¹⁷ Yifeng Philip Chen, et al., "Crowdsourced Data Indicates Broadband has a Positive Impact on Local Business Creation," ArXiv, August 28, 2023, https://arxiv.org/abs/2308.14734?utm_source=chatgpt.com.

¹⁸ Jerry Ellig, "Costs and Consequences of Federal Telecommunications and Broadband Regulations," Mercatus Center, February 16, 2005, https://www.mercatus.org/research/research-papers/costs-and-consequences-federal-telecommunications-and-broadband?utm_source=chatgpt.com.

A 2018 study by Accenture estimated that when NEPA and NHPA reviews are required, they account for 29 percent of deployment costs or \$2.43 billion from 2018 to 2026.¹⁹ A 2019 Charles River study found that the effect on U.S. GDP of a six-month delay in 5G deployment would be roughly \$104 billion and cost 25,200 jobs in 2019.²⁰

Another recent study concluded that: “Despite its long-term benefits, fiber deployment remains hindered by multiple challenges, chief among them a permitting system that often introduces significant delays and inefficiencies. Communities urgently need modern networks to replace aging systems, but time lost to permitting backlogs can escalate project costs, stretch limited skilled labor, and delay vital services for citizens.”²¹

Telecommunication consultants Luck Grove issued a report concluding that “the current [permitting] system is fragmented and inconsistent.”²² That report finds that permitting is often the most significant obstacle to broadband expansion. The implementation of BEAD funding is likely to worsen this situation by increasing the number of permit applications needing to be processed. The report recommends three reforms including a standard application format, clear timelines, and greater regional cooperation.

The Pew Charitable Trusts reviewed all available BEAD implementation projects and compared the barriers identified by state offices.²³ Some constraints were generic, such as the supply chain for materials, the supply of trained workers, and the capacity to manage complicated federal programs. However, virtually every plan mentioned the cumbersome permitting processes. The analysis describes some of the positive initiatives states have implemented to improve the permitting process.

VII. Artificial Intelligence

AI deserves its own discussion regarding the spillover benefits of expanding broadband deployments. First of all, AI requires dramatic extensions in three major infrastructure systems, each of which depends on the rapid exchange of large volumes of data. The most obvious one is the transmission capacity needed to collect and transport data to AI models. These models also require massive amounts of computing power to process the data needed to train AI models. Finally, AI systems require significantly more energy, which requires the ability to transmit electricity rapidly.

¹⁹ Accenture, “Impact of Federal Regulatory Reviews on Small Cell Deployment,” March 12, 2018, https://api.ctia.org/wp-content/uploads/2018/04/Accenture-Strategy-Impact-of-Federal-Regulatory-Reviews-On-Small-Cell-Deployment-Report_2018.pdf.

²⁰ Charles River Associates, “Economic Impacts of Delayed 5G Deployment and Adoption in the US,” <https://www.crai.com/engagements/economic-impacts-of-delayed-5g-deployment-and-adoption-in-the-us/>

²¹ Fiber Broadband Association, “Local Permitting for Fiber Network Projects: The Good the Bad, and the Ugly,” September 2025, https://fiberbroadband.org/wp-content/uploads/2025/08/FBA-Whitepaper_Local-Permitting-for-Fiber-Network-Projects_FINAL-1.pdf.

²² Nick Feder, Jonathan Quinlan, and the Luck Grove team, “The Complexities of Permitting: A Barrier to Connectivity,” February 2025, https://luckgrove.com/wp-content/uploads/2025/02/The-Complexities-of-Permitting.pdf?utm_source=chatgpt.com.

²³ Jake Varn, “States Work to Address Barriers to Broadband Expansion,” Pew, April 2024, https://www.pew.org/en/research-and-analysis/articles/2024/04/03/states-work-to-address-barriers-to-broadband-expansion?utm_source=chatgpt.com.

The business community is increasingly worried about the negative effects of state and local AI laws on broadband adoption. Jurisdictions that pass their own legislation in lieu of federal laws may jeopardize the delivery of large economic benefits, not just to themselves but to other markets as well. One example is SB-205 which was passed by Colorado in 2024. The Common Sense Institute assumed a 1% increase in production costs across six industries. Their models predict that in 2030 the law will reduce state GDP by \$5.5 billion in technological development with another loss of \$7 billion in economic output from the impact on providers.²⁴

VIII. Conclusion

Expanded broadband coverage is closely linked to increased economic activity. It brings direct positive effects such as lower telephone bills, expanded content, and faster delivery and computing times. It also brings indirect benefits in the form of improvement in other industries including health, education, energy, and manufacturing. It is therefore important that broadband deployment occur without unnecessary delay. This deployment includes efforts to expand coverage, lower cost, and increase speed. While some delays are inevitable, they should be shortened or eliminated whenever possible.

As part of its broader efforts to reform regulations, the FCC has initiated two important efforts to eliminate unnecessary broadband deployment delays imposed by state and local governments. These include a Notice of Inquiry focused on eliminating barriers to wireline deployments and a Notice of Proposed Rulemaking for wireless deployments. While no quantitative studies have been published on these particular proposals, a considerable body of existing research on broadband deployments shows that deployment delays have a major negative effect on economic activity and consumer welfare. It is therefore safe to anticipate that the elimination of delays, including those imposed at the state and local level, will have a significant positive effect on the economy and living standards.

²⁴ Thomas Young, Caitlin McKennie, and Caitlin Hereford, “Unintended Costs: The Economic Impact of Colorado’s AI Policy, August 2025, <https://www.commonsestituteus.org/colorado/research/jobs-and-our-economy/unintended-costs-the-economic-impact-of-colorados-ai-policy>.