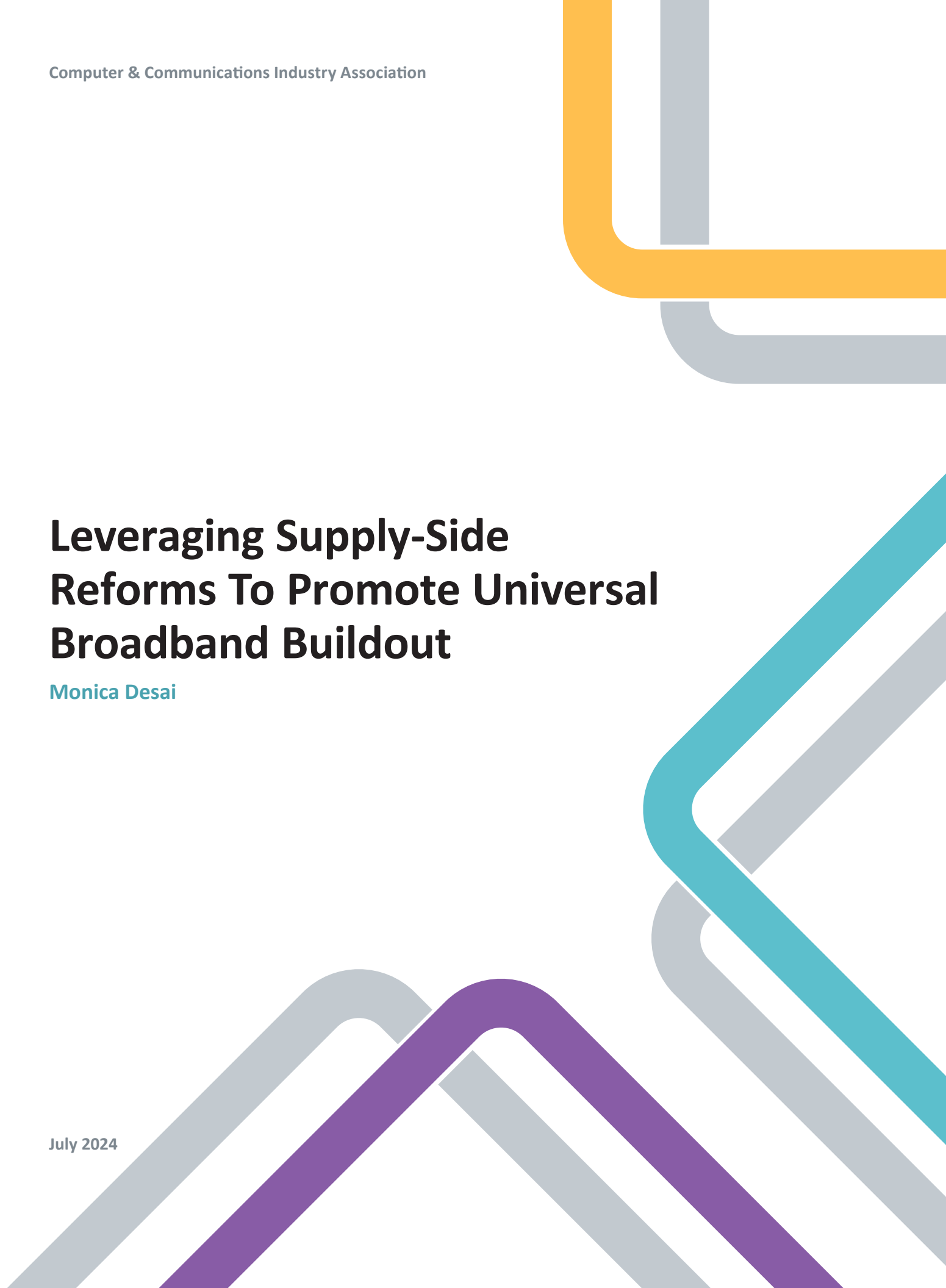


Leveraging Supply-Side Reforms To Promote Universal Broadband Buildout

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July 2024



Key Takeaways:

Achieving universal access to high-speed internet by 2030 is a bipartisan goal of U.S. policymakers. Tens of billions of dollars have been committed to support this goal, yet millions of households and small businesses remain in areas where there is no high-speed internet infrastructure and millions more struggle with limited or unreliable internet options. Internet Service Providers (ISPs) are critical to closing these gaps, yet given shareholder and other obligations, they are not naturally incentivized to build out in the highest cost/lowest return geographies.

Implementing strong supply-side reforms will complement the financial investments already made, making each of the billions of dollars invested go farther, faster. There are a range of supply-side reforms that could be considered, such as:

- “By-right” broadband infrastructure buildout.
- Federal preemption of state and local permitting requirements for federally funded broadband infrastructure projects.
- Tacit approval of permits combined with permit shot clocks for government agencies.
- Requiring government authorities to meet a minimum evidentiary standard before rejecting a properly completed permit application.
- Streamlined permitting processes at all levels of government.
- “Dig Once” policies.
- Promoting the use of existing infrastructure, including sharing underutilized government-owned broadband.

There are also a wide array of tax incentives, subsidy programs, and public-private partnerships that could incentivize more rapid and widespread broadband fiber buildout as described within this report.

Once built, fiber broadband infrastructure typically lasts decades and can support evolving technology—creating an ongoing stream of benefits for consumers, businesses, and governments that will last for decades.

Executive Summary:

Universal access to high-speed internet service is a key U.S. national policy priority. The White House recognized broadband access is critical for work, education, healthcare, and human connections¹: “High-speed internet is no longer a luxury – it is necessary for Americans to do their jobs, to participate equally in school, access health care, and to stay connected with family and friends.”² The Federal Communications Commission (FCC) has similarly emphasized the importance of broadband access.³ Yet, in the United States, millions of households and small businesses are in areas where there is no high-speed internet infrastructure, and millions more struggle with limited or unreliable internet options.⁴

Achieving universal access to high-speed internet will require the buildout of additional broadband infrastructure. Given their obligations to increase shareholder value, Internet Service Providers (ISPs) are naturally incentivized to build infrastructure and provide service in profitable areas — but not in high-cost, lower-profit geographic areas. Recognizing this challenge, Congress, the White House, and the FCC have taken significant and laudable steps towards funding buildout and increased access in those areas. Last year, the White House announced a \$42.5 billion funding initiative to achieve universal high-speed internet connectivity across America by 2030 through the Broadband Equity Access and Deployment program and other funding from the Bipartisan Infrastructure Law.⁵ The FCC also adopted transformative reforms of its Universal Service Fund (USF) to subsidize delivery of broadband service through the Connect America Fund.⁶

These are strong steps forward, though more can be done to further leverage those funding initiatives. Achieving universal access by 2030 will require speed in addition to funding, and some obstacles present timing challenges that even multiple billions of dollars cannot overcome. Funding subsidies alone are not enough to achieve universal access by 2030 when some obstacles present timing challenges. ISPs have repeatedly emphasized that lengthy and unpredictable permitting processes are a major hurdle further complicating the already complex and difficult process of deploying broadband infrastructure, particularly in high-cost areas.⁷ Implementing supply-side reforms to streamline and make buildout processes more predictable would incur minimal costs. These reforms should be considered to protect and expedite the billions of dollars already committed to achieving universal high-speed internet access by the end of the decade.

1 This statement echoes previous statements from prior administrations, most recently the Trump Administration: <https://www.usda.gov/media/press-releases/2020/06/24/trump-administration-invests-86-million-rural-broadband-service>

2 <https://www.whitehouse.gov/briefing-room/statements-releases/2023/06/26/fact-sheet-biden-harris-administration-announces-over-40-billion-to-connect-everyone-in-america-to-affordable-reliable-high-speed-internet/#:~:text=Fact%20Sheet%3A%20Biden%2D%E2%81%A0Harris,%2C%20Reliable%2C%20High%2DSpeed%20Internet>

3 <https://www.fcc.gov/general/connect-america-fund-caf> (“Broadband has gone from being a luxury to a necessity for full participation in our economy and society – for all Americans.”)

4 <https://www.whitehouse.gov/briefing-room/statements-releases/2023/06/26/fact-sheet-biden-harris-administration-announces-over-40-billion-to-connect-everyone-in-america-to-affordable-reliable-high-speed-internet/#:~:text=Fact%20Sheet%3A%20Biden%2D%E2%81%A0Harris,%2C%20Reliable%2C%20High%2DSpeed%20Internet>

5 <https://www.whitehouse.gov/briefing-room/statements-releases/2023/06/26/fact-sheet-biden-harris-administration-announces-over-40-billion-to-connect-everyone-in-america-to-affordable-reliable-high-speed-internet/#:~:text=Fact%20Sheet%3A%20Biden%2D%E2%81%A0Harris,%2C%20Reliable%2C%20High%2DSpeed%20Internet>

6 <https://www.fcc.gov/general/connect-america-fund-caf>

7 Testimony of US Telecom President & CEO Jonathan Spalter before the Senate Commerce Subcommittee on Communications, Technology, Innovation and the Internet, “Ensuring Solutions to Meet America’s Broadband Needs,” December 13, 2022, available at <https://www.commerce.senate.gov/services/files/DADB3815-A56F-472C-8C01-8BABEC1AB208>; See also <https://www.uschamber.com/energy/coalition-letter-on-permitting-reform> (300+ signatories letter to Congress noting that “the single biggest obstacle to building the infrastructure of the future is a broken permitting system.”), Statement calling on the Commission to look at barriers to network expansion, including long permitting processes, ultimately to quickly bring benefits of broadband to unserved communities. <https://www.ncta.com/whats-new/the-cost-of-replacing-old-wooden-poles-is-slowing-down-broadband-deployment-in-unserved-areas>

One area of focus that would have the most immediate impact is to make permitting processes less administratively burdensome. Reducing the number of regulatory submissions required by ISPs would expedite the process, preventing dilatory rejections over minor technicalities, and reducing the number of staff and time required to navigate regulatory burdens overall. Such measures require only minimal government resources and do not create additional burdens on third parties. Moreover, such “cost-reduction” policy solutions are narrowly tailored and have the potential to generate consumer benefits and expanded economic activity far exceeding the cost of investments.⁸

⁸ <https://www.benton.org/blog/affordable-connectivity-program-creates-162-billion-annual-benefits-subscribers>; <https://www.benton.org/publications/affordable-connectivity-program-benefits-outweigh-costs>

Introduction:

The FCC has outlined a concrete goal to build out broadband in the United States to anyone lacking access to 10/1Mbps fixed broadband.⁹ As digital technologies such as artificial intelligence, computer vision, virtual reality and others continue to evolve there will be broad societal benefits. These benefits are likely to include more personalized and efficient services, increased inclusion for people with disabilities, improved workplace safety, and better medical outcomes as healthcare and diagnostics utilizing these technologies advance. We can expect better training in all fields from immersive educational experiences. Improved travel and entertainment experiences, an expanded online marketplace, more jobs and business opportunities, and much more will be available more equally to everyone.

Foundational to this vision is building sustainable and secure broadband infrastructure, including additional investments in fiber lines, data centers, nodes, and other infrastructure that will carry data. ISPs, which are in the business of building and selling broadband access are critical to achieving the FCC's goals. ISPs are also well-positioned to profit from the digital vision and increasing demand for internet service that will come with it.

However, there are underlying tensions between ISP goals (profit maximization) and government connectivity policy goals (100% high-speed connectivity). While most Americans live in areas that are profitable for ISPs to build out high-speed infrastructure and service, there remain pockets of geographies for which the buildout of high-speed infrastructure is unlikely to be profitable. Understandably, the ISPs are less interested in making investments in those areas. The existence of positive externalities and broad social benefits for universal high-speed internet service means U.S. policymakers would benefit from considering additional ways to further incentivize infrastructure builds in areas that remain unserved or underserved, even with additional financial support.

Moreover, the broader long-term societal benefits of broadband infrastructure builds are undisputable.¹⁰ And, once the costs are sunk into building the infrastructure network operating costs remain stable,¹¹ generating long term benefits for the ISPs. There are two key reasons for this. First, the unit cost of traffic declines over time, because the capacity of network equipment grows over time, primarily due to continual advances in technology. Second, ISP networks in large part are not traffic sensitive, particularly in fixed networks and also for significant portions of mobile networks,¹² so once built, ISP networks will be able to serve higher and higher demand volumes without proportionately higher operational costs.

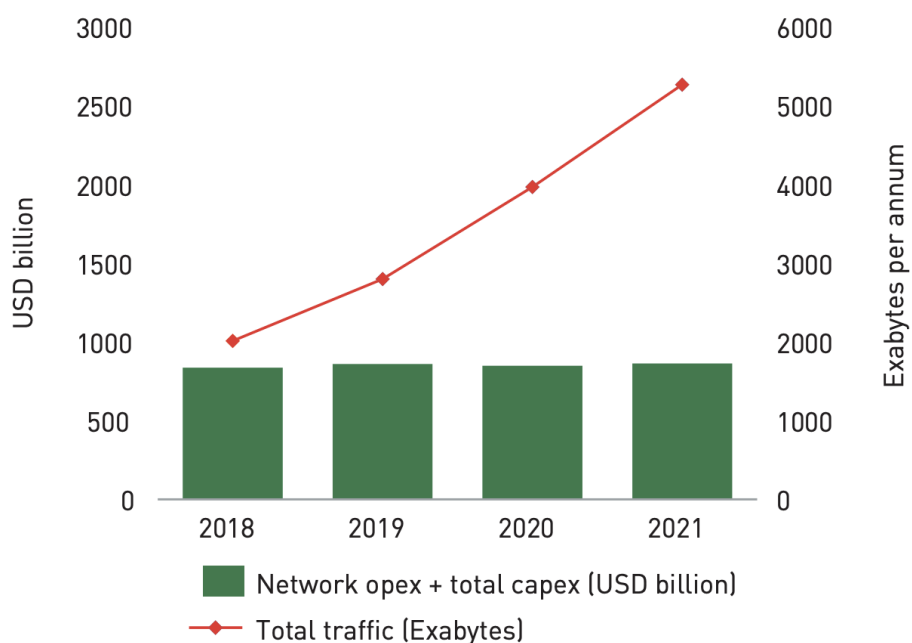
9 <https://www.fcc.gov/general/connect-america-fund-caf>

10 <https://www.benton.org/publications/affordable-connectivity-program-benefits-outweigh-costs>, <https://www.benton.org/blog/affordable-connectivity-program-creates-162-billion-annual-benefits-subscribers>

11 "Since 2018, global traffic delivered over fixed and mobile access networks has increased significantly; over this same period, network-related annual spend by telecom operators has remained relatively stable. " (Analysys Main Report at 33 <https://www.analysys-mason.com/consulting/reports/internet-content-application-providers-infrastructure-investment-2022/>)

12 Analysys Mason Report at 33-34

Growth in Traffic Delivered Over Fixed and Mobile Access Networks, and Evolution of Network-Related Telecom Operators Costs from 2018 to 2021



Source: Analysys Mason, 2022

Network costs are expected to remain stable even while traffic volumes increase into the future. This is especially the case as ISPs are still undergoing their transition to fiber. ISP networks will benefit more and more over time as they transition to new networks. Fiber-based architectures cost less to operate, as they require fewer nodes, thus reducing node-related costs.¹³ As operators accelerate investment in optical fiber networks within the next few years, the result will be long-term operational cost savings.¹⁴ This trend is further supported by evolving and increasingly efficient mobile technologies, which allow mobile operators to add network capacity more efficiently as they advance.¹⁵

¹³ Analysys Mason Report at 34-35. See also Fiber Broadband Association (2020), Reduce network operating expenses, choose FTTH. Available at <https://optics.fiberbroadband.org/Full-Article/reduce-network-operating-expenses-choose-ftth>

¹⁴ European Commission Staff Working Document accompanying the document *Proposal for a Decision of the European Parliament and of the Council establishing the 2030 Policy Programme "Path to the Digital Decade"* (Sept 15, 2021) at p22 ("due to the passive nature of PON FTTH networks, operators can realise Opex savings compared to copper and cable networks, which rely on powered active equipment in the field and require cooling. Decommissioning the copper network allows operators to consolidate their central offices and to reduce the energy consumption per line from central office equipment to around a tenth of that for the copper acceleration technologies VDSL2 and G.fast and for DOCSIS 3.1." [Citing Analysys Mason June 2020]).

¹⁵ Analysys Mason Report at 34. See also Fiber Broadband Association (2020), Reduce network operating expenses, choose FTTH. Available at <https://optics.fiberbroadband.org/Full-Article/reduce-network-operating-expenses-choose-ftth>. Although certain costs for operations increase as the size of the network increases (such as maintenance, power and cooling), these are not proportional to traffic level increases.

Once built, fiber broadband infrastructure typically lasts decades, and can continue to serve higher speeds as technology evolves, creating an ongoing stream of benefits for consumers, businesses, and governments that is expected to last decades. For example, fiber optic cables laid down in the 1990s to serve Mbps speeds often continue to be used today more than 30 years later to provide 10Gbps speeds and faster.¹⁶ Fiber broadband infrastructure built today can likely provide consumers with Tbps speeds decades from now.

In short: the broadband fiber buildout to the small fraction of unserved and underserved American households is a one-time capital expense that will provide benefits for at least a generation, and does not imply a need for *incremental* operating expense subsidies for ISPs.

Competing Priorities Creating Challenges:

U.S. policymakers and ISPs have naturally competing priorities when it comes to building out in high-cost geographies. U.S. policymakers want universal high-speed internet access, with a particular focus on ensuring that rural or remote geographies and lower-income geographies are connected. However, ISPs are obligated to maximize shareholder value and accordingly there is less natural incentive for ISPs to build in expensive rural or remote geographies and less profitable lower-income geographies. Rural and remote geographies typically represent higher cost of infrastructure buildout per subscriber. Lower-income geographies represent typically lower revenue per subscriber – that is, areas where fewer residents will sign up for premium-tier subscriptions over the same infrastructure, reducing revenue and profit potential. In cases where rural and remote geographies overlap with lower-income geographies, there is typically a high-cost, low-reward scenario for investment. To bridge this gap, additional policy concessions to incentivize broadband buildout in currently unprofitable regions would be helpful to advance critical broadband policy priorities and objectives, including universal high-speed internet access by 2030.

ISPs and their trade associations have advocated for a range of policies to motivate additional broadband fiber deployment, including both supply-side reforms and a range of subsidy proposals such as tax incentives and public-private partnerships. The supply-side reforms are the most practical options for policymakers to consider, as they result in lower cost infrastructure buildout and deployment— increasing the incentive for ISPs to build in otherwise unprofitable locations without complex and controversial subsidy frameworks that are difficult to enact. A broad cross-section of groups is asking Congress to implement such policies, including organizations representing ISPs, content and application providers, civil society groups, and countless trade associations across a diverse array of industries.¹⁷

Supply-side reforms are win-win proposals: the cost to government jurisdictions is typically minimal, and the benefits to consumers, businesses, and government of additional and faster broadband buildout are substantial. There are also likely beneficial fiscal policy spillovers, such as incremental tax collections from increased economic activity.

¹⁶ <https://bbcmag.com/nothing-lasts-forever-except-fiber-broadband/>

¹⁷ <https://www.uschamber.com/energy/coalition-letter-on-permitting-reform>

Reform Ideas

A 45-page National Telecommunications and Information Administration (NTIA)/Department of Commerce document details numerous regulatory burdens that applicants must meet to deploy broadband, ranging from required National Environmental Policy Act analyses to state-and-local permitting requirements,¹⁸ that all add significantly to the cost of broadband deployment. NTIA also references a number of consensus ideas for streamlining – such as implementing “dig once” policies, making sure roadside conduits are future-proof and have excess capacity, and implementing pole attachment policies designed to minimize costs and time delays for broadband deployment.¹⁹ This document provides perspective why ambitious streamlining measures are in order.

A variety of supply side reform proposals have been urged by organizations and experts that are experienced with broadband deployment. A review of the relevant literature suggests that the following supply-side policy reforms would be particularly effective in reducing the cost of broadband buildout:

- **“By-right” broadband infrastructure buildout:** Create a set of safe harbor conditions under which broadband fiber buildout could proceed without requiring advance permit approval, or alternately under which permit approval would be guaranteed within a short time frame at a single point of application.
- **Federal preemption of state and local permitting requirements for broadband infrastructure projects receiving federal funding:** Treat broadband fiber deployments receiving federal funding or funding from federally-authorized programs like the Universal Service Fund as federal infrastructure projects whose federal approvals preempt state and local permitting requirements.
- **“Tacit approval” of permits combined with permit “shot clocks” for government agencies at all levels of government:** There are already some FCC “shot clocks” that preempt local authority over some telecom infrastructure and require state and local government authorities to respond to and process applications within set time limits.²⁰ Expanding the applicability of “shot clocks” to all permits associated with broadband fiber deployment would speed up government review processes related to permits. “Shot clocks” can be made more useful with the incorporation of a “tacit approval” rule. Under a tacit approval rule, government authorities that fail to respond to permit applicants and process their applications within specified time limits are considered to have approved the requested permit.

18 https://broadbandusa.ntia.doc.gov/sites/default/files/2022-12/IFA_Permitting_101_PDF.pdf

19 https://broadbandusa.ntia.doc.gov/sites/default/files/2022-12/IFA_Permitting_101_PDF.pdf

20 <https://bbklaw.com/resources/new-fcc-shot-clocks-and-other-rules-preempting-local-authority-over-wireless-take-effect-today/>; <https://ustelecom.org/42-5-billion-reasons-to-pass-permitting-reform-now/>

- **“Presumed approval”:** Require government authorities to identify concrete problems with an application (such as incompleteness) in order to reject a permit or similar approval. Rejection of a properly completed permit application by a government authority would require that the government authority meet a minimum evidentiary standard of likely harm from a specific element of an application, and prevent vague justifications for denial of permits to build infrastructure, such as aesthetics.
- **Measures Aimed at the Local Government Level:** The federal government could incentivize cities and localities by providing access to federal infrastructure dollars in exchange for streamlined and expedited review and approval processes. These could include examples such as blanket permits, providing expedited inspections, waiver of rights of way fees for network deployments, and simplifying standard forms to make applications easier.²¹ Localities could also be rewarded with federal dollars for providing easier access to rights of way.²² And, BEAD program money could potentially be utilized to increase permitting staff at the local level.²³
- **“Apply Once” or “apply in a one-stop-shop” policies:** Create a single federal application portal for permits related to broadband buildout, and allow would-be infrastructure builders to satisfy application requirements in a much faster manner, with more certainty that all relevant agencies have been applied to at once. This would likely involve federal MOUs and streamlined processes, including presumed approval for all federal agencies. An apply once, single application portal would significantly reduce regulatory burden and uncertainty regarding permit applications at the federal level.
- **“Dig Once” policies:** ISP trade associations representing telecommunications companies have advocated granting ISPs access to state and local government-owned rights of way as a simple way to reduce broadband deployment costs. Other suggestions include mandating the installation of conduit for fiber-optic cable during road construction, and/or requiring that ISPs be notified of road construction that presents an opportunity for an ISP to install broadband.²⁴ As up to 90% of the cost of broadband deployment can be digging up roads (or digging adjacent to roads) and repairing those roads, “dig once” policies are a clear means of reducing broadband deployment costs.²⁵

21 https://ustelecom.org/wp-content/uploads/2022/08/USTelecom-State-Broadband-Solutions_permitting.pdf

22 <https://ustelecom.org/get-right-with-rights-of-way/>; <https://www.gsma.com/gsmaeurope/news/joint-telecom-industry-state-ment-on-the-gigabit-infrastructure-act/> (in Europe, ISP/telco trade associations like ECTA, ETNO, GIG Europe, and GSMA issued a joint statement calling for “tacit administrative approvals for permit-granting including right of ways.”)

23 https://ustelecom.org/wp-content/uploads/2022/08/USTelecom-State-Broadband-Solutions_permitting.pdf

24 <https://www.ustelecom.org/dig-once-a-solution-for-rural-broadband/>

25 https://www.ey.com/en_us/insights/strategy-transactions/tactical-approaches-to-achieve-benefits-of-dig-once; https://broadbandusa.ntia.doc.gov/sites/default/files/2022-12/IFA_Permitting_101_PDF.pdf

- **Promoting the use of existing infrastructure, including sharing underutilized government-owned broadband:** Many rural areas have existing broadband fiber deployed for very narrow purposes, such as for specific government uses at the state or local level.²⁶ Often this legacy fiber could help address connectivity problem for residents of rural communities, but the owners of that fiber, often state or local government agencies, often either refuse to sell bandwidth to ISPs and allow connections to homes, or are prohibited from doing so by state laws²⁷. One way to reduce connectivity costs would be to require that underutilized fiber bandwidth and connectivity in areas receiving broadband-related federal subsidies, such as from BEAD or USF funds, be available to be leased to ISPs for the purpose of connecting residents and businesses.²⁸

Conclusion

U.S. policymakers want universal high-speed internet access in the next decade, and are offering significant financial support for broadband fiber buildout. Supply side reforms will help achieve this objective, and will make federal subsidy dollars more impactful. For-profit ISPs are obligated to maximize shareholder value, and are not intrinsically motivated to make infrastructure investments in geographic areas with low returns on investment, which are disproportionately rural or remote areas, and lower-income areas. Policy reforms that result in lower deployment costs, such as streamlined permitting and reduced compliance costs, will complement existing subsidy programs and help incentivize broadband deployment in areas that would otherwise not make financial sense.

In order to achieve universal high-speed internet access, U.S. policymakers should consider supply-side reforms to reduce the cost of building internet infrastructure, such as:

- Streamlining permitting processes at all levels of government. Options may include:
 - “By-right” broadband infrastructure buildout.
 - Federal preemption of state and local permitting requirements for broadband infrastructure projects receiving federal funding.
 - “Tacit approval” of permits combined with permit “shot clocks” for government agencies at all levels of government.
 - “Presumed approval” such that rejection of a properly completed permit application by a government authority requires meeting a minimum evidentiary standard.
 - Taking steps aimed at the local level.

²⁶ <https://potsandpansbyccg.com/2023/12/07/removing-broadband-construction-barriers/>

²⁷ <https://potsandpansbyccg.com/2023/12/07/removing-broadband-construction-barriers/>

²⁸ <https://potsandpansbyccg.com/2023/12/07/removing-broadband-construction-barriers/>

- “Apply Once” or “apply in a one-stop-shop” policies for the federal government, such that there is a single application portal. This would likely involve federal MOUs and streamlined processes, and should be combined with tacit approval and presumed approval for all federal agencies.
- “Dig Once” policies.
- Promoting the use of existing infrastructure, including sharing underutilized government-owned broadband.

Appendix: A Detailed Menu of Potential Policy Solutions

Two basic categories of policy solutions that could incentivize ISPs to build out high-speed internet infrastructure in currently unprofitable geographic areas with either high costs or low revenue potential are **(1) Reducing Broadband Deployment Costs**, and **(2) Subsidizing Infrastructure Buildout**.

1. Reducing Broadband Deployment Costs

Reducing the cost of infrastructure buildout is the best approach to incentivize ISPs to build more high-speed infrastructure than currently planned, as a complement to the existing subsidy programs that are already in place. A classic supply-side policy solution, reducing costs in this context generally requires preventing unnecessarily burdensome administrative and delay-related costs on ISPs. In many cases, such supply-side reforms reduce government costs while increasing infrastructure buildout, often with positive spillovers, which increases economic activity and overall tax revenues.²⁹

There are a wide variety of supply-side cost-reduction measures suggested by ISPs, and all are worth considering, including reducing the number of approval steps needed to build high-speed internet infrastructure, reducing the time spent seeking approval at each step, and preventing any individual authority from imposing excess delays. In particular, policies like granting ISPs approval by default from an authority after a set period of time with no decision, or from an authority that halts progress with non-substantive objections, can radically reduce the cost of building infrastructure. Similarly, policies that grant ISPs safe harbors under which they have “by-right” permission to build high-speed internet infrastructure and to continue building while addressing paperwork requirements can allow ISPs to build more quickly.

The United States and Canada have considered a range of policy initiatives to reduce the cost of infrastructure buildout, most of which can be divided into the general categories of 1) streamlined permitting and rights of way processes, and 2) reduced regulatory burdens.

Streamlined permitting and rights of way processes: Ambitious U.S. infrastructure targets not only require monetary investments; they need speed. The U.S. and state and local governments should work to eliminate unnecessary bureaucracy and facilitate faster approvals. For example, clear timelines for granting or denying broadband infrastructure-related permits, or for coming back with clarifying questions, would help provide applicants with certainty. There could potentially be approval by default if an application is not answered within a specified period of time or a “shot clock,” eliminating the risk of applications remaining in limbo. Facilitating the use of electronic portals as “one stop shops” for permits will allow for a more efficient process

²⁹ <https://www.epi.org/publication/impact-of-infrastructure-investments/>

whereby applicants must only apply once in a single portal for permission to build. And ensuring application documents are only requested once would also ease the burden on applicants. It could be useful to implement an expedited approval process in narrow circumstances such as, for example, when upgrading existing builds without significant changes to agreed-upon criteria. There are several reforms and initiatives that serve as good examples for generating input for ideas, and reducing overall regulatory burdens:

- The FCC’s Broadband Deployment Advisory Committee. The committee’s mission is to make recommendations for the Commission on how to accelerate the deployment of high-speed internet access by reducing and/or removing regulatory barriers to infrastructure investment.³⁰ The Committee has recommended supply-side programs including reducing regulatory costs, grants, loans, tax abatement, and other initiatives.³¹
- Middle Class Tax Relief and Job Creation Act of 2012 (Section 6409(a)): State and local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base stations.³²
- The FCC’s “Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment” proceeding: the FCC implemented specific timelines for each step related to access to poles.³³ Canada pointed to this as a possible model to follow.³⁴
- Most US federal agencies require the one-stop shop form (SF-299) to authorize easements for wireline or wireless communications uses or facilities on federal lands. The form can be accessed online and submitted via mail, fax, or in-person. Applications for communications sites can be filed online.³⁵
- In Virginia, the transportation board has 45 days to grant or deny approval for use of right-of-way, and if denied it must provide a written explanation of the reasons the permit was denied, and the actions required to cure the denial.³⁶
- In Ohio, municipalities must approve or deny applications within 60 days of receipt.³⁷
- The FCC has a recurring consultation to review existing rules and eliminate those that are no longer necessary or serving the intended purpose.³⁸ A similar consultation could be implemented specifically focused on the impact of existing

30 <https://www.fcc.gov/broadband-deployment-advisory-committee>

31 <https://www.fcc.gov/sites/default/files/bdac-low-income-communities-approved-rec-12172020.pdf>

32 <https://www.congress.gov/112/plaws/publ96/PLAW-112publ96.pdf>

33 <https://docs.fcc.gov/public/attachments/FCC-18-111A1.pdf>

34 <https://crtc.gc.ca/eng/archive/2023/2023-31.htm>

35 https://broadbandusa.ntia.doc.gov/sites/default/files/2022-12/What_is_Permitting_BEAD_2022.pdf

36 https://broadbandusa.ntia.doc.gov/sites/default/files/2023-03/Permitting_Best_Practices_Case_Studies.pdf

37 Ibid

38 See, e.g., <https://www.federalregister.gov/documents/2006/08/23/E6-13965/2006-biennial-review-of-telecommunications-regulations> (FCC periodic review of telecommunications regulations to determine whether it would be in the public interest to eliminate or modify any existing regulations, required by Section 11 of the Communications Act).

rules on broadband deployment. There could be additional flexibility related to market consolidation. Streamlined accounting rules and cost allocations also could be considered.

- The MOBILE NOW Act, which introduced a 270-day shot clock to review and notify the applicant of denial; a notice for roadwork to facilitate deployment; and a Federal Asset Database.³⁹

2. Subsidizing Infrastructure Buildout

Paying ISPs to build, contingent on *targeted* infrastructure buildout, is another way to incentivize increased investment in high-cost and lower-income geographies. The main drawback is the cost to governments providing subsidies and related impact on deficits. At a time of elevated strain on U.S. budgets, subsidies may be more difficult to implement. However, it is possible to craft subsidies in such a way as to be revenue-neutral and even revenue positive over longer time horizons.

Broadband internet buildout is likely to increase economic activity and thus government tax revenues. With high-quality economic analysis, it is possible to estimate the economic impact of high-speed internet access in a given geographic area. Scaling incentives that reward ISPs for providing high-speed internet service in unserved and underserved areas can incentivize targeted buildout.

Two common ways that subsidies can be implemented are **tax incentives**, or **public-private partnerships**.

Tax Incentives: Internet infrastructure is characterized by high up-front costs that result in long term benefits. However, there can be significant short-term shareholder value pressure on businesses to show positive financial results, which can disincentivize costly long-term investments. To support the ambitious infrastructure build-out goals within the next decade, the U.S. and state and local governments could consider tax incentives designed to encourage investment in broadband fiber infrastructure. One idea is implementation of a significantly higher than normal tax deduction for qualifying infrastructure expenditures advancing build-out targets. For example, the United Kingdom implemented a 130% first-year capital allowance “super deduction” on a temporary basis to encourage infrastructure investments.⁴⁰ Other incentives could include higher annual depreciation allowances for specified investments, or special tax relief rates for building in previously unserved areas and for significant upgrades in underserved areas. Carry-forward loss rules could be adjusted to incentivize buildouts. Tax credits could be implemented for job creation in connection with build-outs. Property tax abatements in connection with broadband deployment could also be considered. In general, tax incentives that will put cash back on the balance sheets of those deploying infrastructure in furtherance of universal high-speed internet service targets will incentivize further builds.

³⁹ [https://www.ntia.gov/report/2022/final-mobile-now-act-report-congress-update#:~:text=The%20MOBILE%20NOW%20Act%20direct-ed,GSA\)%20to%20develop%20recommendations%20for](https://www.ntia.gov/report/2022/final-mobile-now-act-report-congress-update#:~:text=The%20MOBILE%20NOW%20Act%20direct-ed,GSA)%20to%20develop%20recommendations%20for)

⁴⁰ <https://www.gov.uk/guidance/super-deduction>

Examples of such reforms or reform proposals include:

- United States
 - Broadband Grant Tax Treatment Act, which amends the internal revenue code to exempt from gross income any qualified broadband grant made for purposes of broadband deployment⁴¹
 - Opportunity zones: Tax incentives that encourage any corporation or individual with capital gains to invest in low-income and undercapitalized communities. Telcos can use their own capital gain dollars to invest in underdeveloped, low-income, and rural communities that are underserved, and then defer significant federal taxes.⁴²⁴³
 - Social bonds, which are internationally offered. ISPs can use social bonds, which allow investors to raise funds for projects with positive social outcomes including internet infrastructure.⁴⁴
 - State level tax incentives and bonds: 16 states use special tax provisions to encourage broadband deployment, including tax deductions or exemptions for companies that purchase broadband equipment, and tax incentives for broadband investments in unserved and underserved areas. Some states also allow government bonds, often used to finance public infrastructure projects, but can also be used to finance publicly owned broadband networks.⁴⁵
 - Bonus Depreciation: Because infrastructure buildout is very capital-intensive, it can take many years to recoup investments. Introducing a 100% bonus depreciation, or immediate expensing, for property used for broadband deployment would give ISPs an immediate cash-tax benefit.⁴⁶
 - Research and Development Tax Credit: ISPS can claim R&D tax credits if they experiment with “unique services or products, novel technologies like AI, or solutions that improve wireless connection.”⁴⁷
 - Investment Tax Credits at the state level: Some states offer investment tax credits for businesses that make qualified investments in telecommunications sectors. For example, in Georgia, investment in general equipment “for telecommunications services earns tax credits of 1 percent to 5 percent.”⁴⁸

41 <https://www.congress.gov/bill/118th-congress/senate-bill/341?s=1&r=97>

42 <https://kpmg.com/us/en/articles/2022/financial-incentives-broadband-democratization.html>

43 <https://www.taxpolicycenter.org/briefing-book/what-are-opportunity-zones-and-how-do-they-work>

44 <https://www.ifc.org/en/about/investor-relations/social-bonds#:~:text=IFC's%20social%20bonds%20offer%20investors,%2C%20health-care%2C%20finance%20and%20sanitation>

45 <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/07/how-states-support-broadband-projects>

46 <https://taxnews.ey.com/news/2018-0063-tax-cuts-and-jobs-act-will-affect-telecommunications-industry>

47 <https://www.endeavoradvisors.com/telecommunications-rd-tax-credits/#:~:text=In%20other%20words%2C%20your%20telecommunications,solutions%20that%20improve%20wireless%20connection>

48 <https://www.georgia.org/investment>

- Canada
 - Capital Cost Allowance: Businesses can deduct a portion of the cost of eligible assets, such as telecom equipment and infrastructure, encouraging companies to upgrade and expand their networks.⁴⁹
 - Scientific Research and Experimental Development tax incentives: Encourage businesses to conduct research and development in Canada.⁵⁰ Telecom companies investing in the development of new technologies, network optimization or other innovative services may qualify for the tax credit.

Public-Private Partnerships: There could be special structures created for public-private deployment of broadband in areas where there is less incentive for the private sector to serve or to upgrade service. In a typical model the government entity generally funds, builds and owns the underlying infrastructure, and the private entity generally provides the service, handling the network operations and delivery of service. The government entity could provide support through economic development incentives, tax incentives, access to public assets, and other benefits. There are many variations of public-private partnership models.⁵¹ Examples include:

- United States:
 - The Infrastructure Investment and Jobs Act (IIJA) allocated \$65 billion for broadband development, particularly in rural and underserved communities. This includes the Broadband Equity, Access and Deployment (BEAD), which is a federal grant program that aims to get all Americans online by funding partnerships between states or territories, communities, and stakeholders to build infrastructure where needed to increase adoption of high-speed internet.⁵²
 - American Rescue Plan (ARP) allocated funding for communities to make necessary investments in broadband infrastructure⁵³, such as the \$10 billion Capital Projects Fund⁵⁴ used, inter alia, to connect tens of thousands of homes and businesses in New York to affordable, high-speed internet⁵⁵
 - Connect America Fund, which is designed to ensure that consumers in rural areas have access to modern communications networks. Partnership between government and private⁵⁶

49 <https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/sole-proprietorships-partnerships/report-business-income-expenses/claiming-capital-cost-allowance.html>

50 Scientific Research and Experimental Development (SR&ED) Tax Credit

51 See <https://medium.com/national-broadband-resource-hub/getting-started-with-broadband-public-private-partnerships-dec10ce-c40a4> for a detailed discussion of how public-private partnerships can be implemented to support broadband deployment.

52 <https://broadbandusa.ntia.doc.gov/funding-programs/broadband-equity-access-and-deployment-bead-program>

53 <https://www.congress.gov/bill/117th-congress/house-bill/1319/text>

54 <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/capital-projects-fund>

55 <https://home.treasury.gov/news/press-releases/jy2039#:~:text=To%20date%2C%20CPF%20has%20awarded,of%20thousands%20of%20individuals%20who>

56 <https://www.fcc.gov/general/connect-america-fund-caf>

- USDA Rural Development Broadband ReConnect Program: The program “furnishes loans and grants to provide funds for the costs of construction, improvement, or acquisition of facilities and equipment needed to provide broadband service in eligible rural areas.”⁵⁷
- FCC Rural Digital Opportunity Fund (RDOF): In 2019, the \$20.4 billion Rural Digital Opportunity Fund was established to “bring high speed fixed broadband service to rural homes and small businesses that lack it.”⁵⁸
- National Telecommunications and Information Administration (NTIA) Broadband Infrastructure Program: A \$288 million broadband deployment program to “support broadband infrastructure deployment to areas lacking broadband, especially rural areas.”⁵⁹
- Canada:
 - Canada Connect to Innovate Program (CTI), which was created to invest \$500 million in expanding high-speed Internet in communities underserved by the private sector across Canada.⁶⁰
 - Connecting Canadians, the government contributed \$305 million to extend and enhance broadband service to a minimum target speed of five Mbps for over 300,000 Canadians.⁶¹
 - Universal Broadband Fund (UBF): It is a \$3.225 billion fund that “supports high-speed internet projects across the country”, which will fast internet to rural and remote communities.⁶²
 - Rural and Northern Communities Infrastructure Stream (RNIS): Program in Canada aimed at improving internet connectivity for rural and northern communities.⁶³
 - Canada Infrastructure Bank (CIB): the CIB invests in large broadband projects across Canada.⁶⁴

⁵⁷ <https://www.usda.gov/reconnect#:~:text=What%20is%20the%20Rural%20Development,service%20in%20eligible%20rural%20areas>

⁵⁸ <https://www.fcc.gov/auction/904>

⁵⁹ <https://www.ntia.gov/category/broadband-infrastructure-program>

⁶⁰ <https://ised-isde.canada.ca/site/high-speed-internet-canada/en/canadas-connectivity-strategy/high-speed-access-all-canadas-connectivity-strategy>

⁶¹ <https://www.canada.ca/en/innovation-science-economic-development/news/2016/04/connecting-canadians.html>

⁶² <https://ised-isde.canada.ca/site/high-speed-internet-canada/en/universal-broadband-fund>

⁶³ <https://www.infrastructure.gc.ca/plan/rnc-crn-eng.html>

⁶⁴ <https://cib-bic.ca/en/sectors/broadband/>