

Broadband Issues Brief 2022-2

State Policies that Impact Rural Broadband Availability

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Introduction

It is well known that broadband availability lags behind in rural parts of the country. Research has shown that population density, demographic, and socioeconomic factors (income, education, etc.) impact the return on investment for privately owned internet service providers (ISPs). Because of this, these companies have lower incentives to build networks and offer services in rural locations. Figure 1 demonstrates that rural broadband availability (for the current definition of 25 Megabits per second (Mbps) download and 3 Mbps upload) is still well behind that for their urban counterparts – but also that it has been improving over time. However, the gap in higher-speed availability (100 Mbps down / 10 Mbps up) has remained sizable over time (Figure 2).

States have taken a variety of approaches towards improving their rural connectivity (DeWit & Reed, 2022). Until recently, however, very few academic studies had explored the impacts of specific state-level policies. One reason for the lack of thorough studies on this topic was a scarcity of data relating to broadband policies across states. This changed in 2019 when the Pew Charitable Trusts established the interactive State Broadband Policy Explorer (Pew Trusts, 2021). This tool, updated annually, scans state statutes, executive orders, and governing directives for terms relating to broadband and compiles them in an easy-to-use map and spreadsheet. The current version (with data as of January 2021) has over 840 entries on policies dating back to 1991 and includes the date of introduction as well as a link to the



Summary Focus and Findings

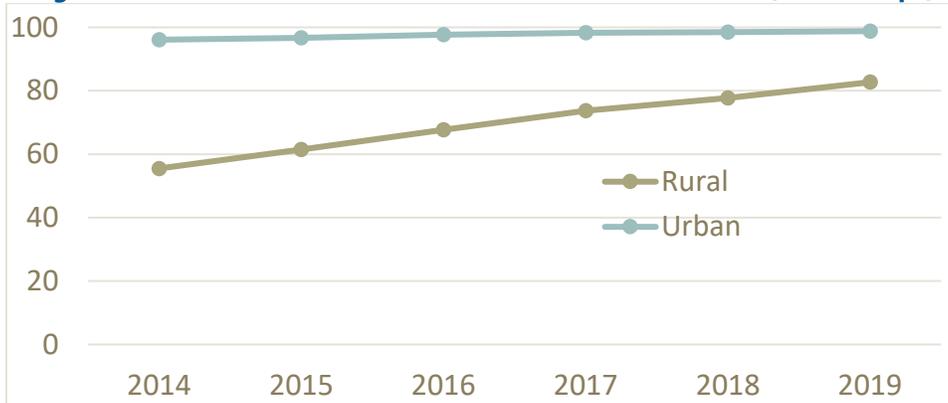
States have taken a variety of approaches to improving rural broadband availability. However, few academic studies have explored the impacts of specific state-level policies. This brief examines the recent literature on this topic and highlights three main findings:

- 1) State funding and state broadband offices matter for increasing overall availability;
- 2) Restricting municipalities from offering broadband services holds back rural availability; and
- 3) "Dig-once" and permitting policies can improve fiber access.

Download speed refers to how quickly your device can *retrieve* data from the internet, and is important for watching videos, loading websites, and downloading files. Upload speed refers to how quickly your device can *send* data to the internet, and is important for video calls, posting social media content, and uploading email attachments.

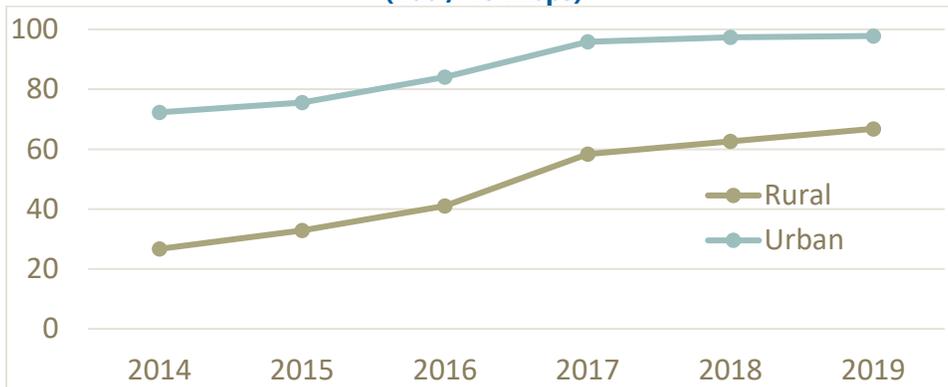
relevant legislation. This brief examines the results of two recent studies (Whitacre & Gallardo, 2020; Biedny et al., 2022) exploring the impacts of specific state-level policies.

Figure 1. Percent of Households with Access to Broadband (25 / 3 Mbps)



Source: Federal Communications Commission (FCC) Broadband Deployment Reports, 2016-2021. Figure by authors.

Figure 2. Percent of Households with Access to Higher-Speed Broadband (100 / 10 Mbps)



Source: Federal Communications Commission (FCC) Broadband Deployment Reports, 2016-2021. Figure by authors.

Summary Findings (Summary in Table 1)

State Funding and State Broadband Offices Matter

Whitacre and Gallardo (2020) document a significant increase in the number of states that offered state-level broadband funding programs and that had state broadband offices between 2012 and 2018. They found that broadband funding programs led to county-level broadband availability rates that were about 2 percentage points higher than in otherwise comparable counties. This held both for the general broadband definition (25/3 Mbps) and for higher-speed fiber access. They also found that these funding programs led to higher levels of competition among providers in rural areas, with an additional 1.4 percent of rural residents having a choice between two or more broadband providers. The presence of a state broadband office had a similar positive impact on fiber availability in

rural areas – increasing fiber access by 1.5 percentage points – and on competition levels for more urban locations (1.6 percentage point increase).

Municipal Restrictions Hold Back Rural Broadband Availability

Whitacre and Gallardo (2020) also examine the impact of state policies that restrict the ability of municipalities to offer broadband. These policies have become less popular over time, with some states repealing them – but are still present in 18 states (Cooper, 2021). The study documents that these restrictions led to lower levels of 25/3 service and fiber availability. The impacts on rural counties were sizeable – a 3.7 percentage point reduction in 25/3 availability, and a 1.6 percentage point reduction in fiber availability.

“Dig-Once” and Permitting Policies Can Improve Fiber Access

Biedny et al. (2022) explore two additional broadband policies: (1) so-called “dig-once” policies requiring construction projects to notify local internet providers about the opportunity to bury fiber conduit, and (2) permitting policies requiring a timely response from local jurisdictions regarding the installation of broadband equipment. Their analysis uses the state of Iowa (which passed both policies in 2015) as an example and compares fiber and fixed wireless availability both before and after the policies were in place. They find that these policies increased fiber availability in Iowa by between 2.4 and 6.6 percentage points, but that they did not have any impacts on fixed wireless access.

Table 1. Summary of Recent Studies on State Broadband Policy

	Policy of interest	State-level funding	State broadband office/task force	Municipal Restrictions	Dig-Once & Expedited Permitting
	<i>Source</i>	<i>Whitacre & Gallardo (2020)</i>	<i>Whitacre & Gallardo (2020)</i>	<i>Whitacre & Gallardo (2020)</i>	<i>Biedny et al. (2022)</i>
Outcome of interest	25/3 broadband availability	1.2 pp increase overall. 1.8 pp increase in rural counties.	No impact found.	3.1 pp decrease overall. 3.7 pp decrease in rural counties.	N/A
	Fiber availability	2.0 pp increase overall. 2.1 pp increase in rural counties.	1.5 pp increase in rural counties only.	2.2 pp decrease overall. 1.6 pp decrease in rural counties.	2.4 – 6.6 pp increase across modeling specifications.
	Fixed Wireless availability	N/A	N/A	N/A	No impact found.
	Broadband Competition	1.4 pp increase in rural counties only.	1.6 pp increase overall. No impact in rural counties.	1.8 pp decrease overall. No impact in rural counties.	N/A

Note: pp = percentage point

Recommendations

Start (and Fund) a State Broadband Office, and Let it Distribute Grants

The forthcoming \$65B Broadband Equity, Access and Deployment (BEAD) program will largely be run by individual states. Those without a State Broadband Office – and without experience distributing broadband grants – will be behind the curve. The faster states can move towards establishing a formal broadband office, the better. State broadband offices are crucial for building relationships with stakeholder groups, executing planning and capacity building, and advancing broadband projects and policy.

Remove Municipal Restrictions

States with policies that restrict the ability of cities or counties to provide broadband service are at a disadvantage. Research shows that rural counties in states with municipal broadband restrictions had lower levels of 25/3 and fiber service. Several states have already repealed the legislation or moved to reduce the blocks that are in place. Doing so can have a meaningful impact on 25/3 and higher-speed availability in rural areas.

Dig-Once Can Work

Biedny et al. (2022) showed that dig-once policies were effective at improving fiber availability in Iowa. While the study was not national in scope, these results are promising for other states.

Data and Methods

This brief summarizes the findings of two recent studies on state-level broadband policies. The policy data underlying these studies comes from Pew's Interactive State Broadband Policy Explorer (2019; updated annually). Categories of policies in this explorer include broadband programs, competition/regulation, funding and financing, and infrastructure access. Data on broadband availability came from the FCC's Form 477, which requires all internet providers to list the Census blocks that they serve as of June 30 and Dec 31 each year. The studies used statistical techniques including dynamic panel models, coarsened exact matching, and difference-in-difference regressions to estimate the causal effect of the policies.

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Acknowledgements

Work on this Issue Brief was supported in part by a grant to the Southern Rural Development Center through the Extension Foundation's New Technologies for Ag Extension grant no. NTAE-2021-2138 from the U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture. Opinions, findings, or recommendations expressed here are those of the authors and do not necessarily reflect the USDA.

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