

Broadband Needs and Opportunities

States can work with communities to address rural, low-income needs

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Broadband needs and opportunities in Iowa

States can work with communities to address rural, low-income needs

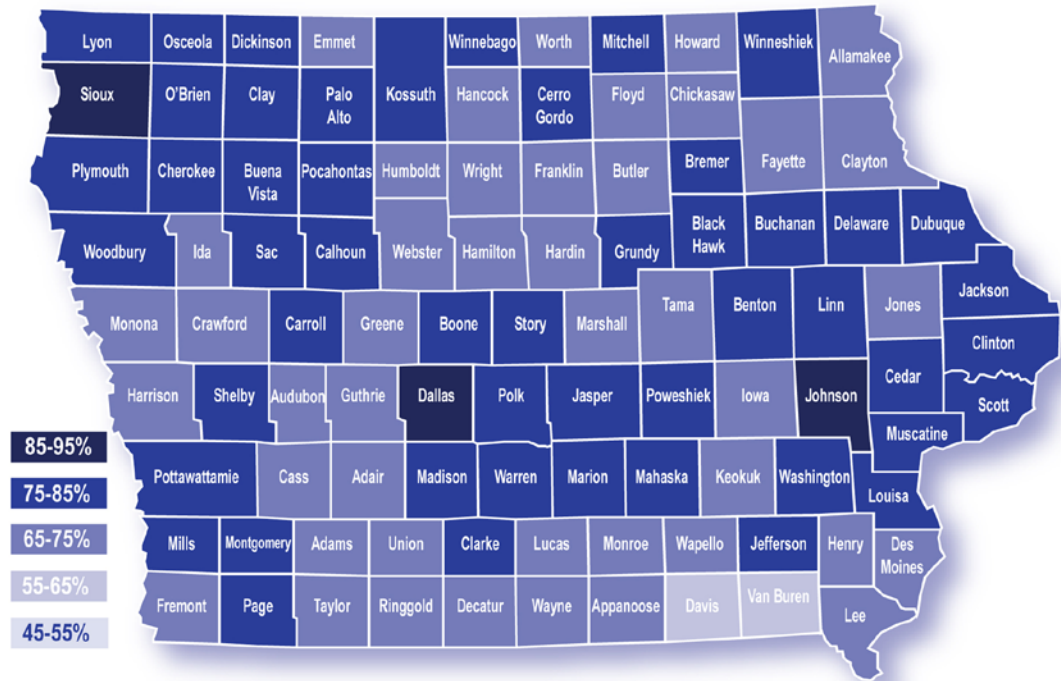
By Karen Mossberger, Arizona State University
Caroline Tolbert, University of Iowa
Scott LaCombe, University of Iowa and Smith College

As so much of daily life moved online during the pandemic, unequal access to the internet became an urgent problem for communities across the state, as schools, libraries and businesses closed, workers were sent home to work remotely, shops turned to online commerce for survival, and hospitals increased reliance on telemedicine. Two decades after the emergence of broadband, or high-speed internet, many rural communities lack the infrastructure to support distance education, telecommuting, or telehealth. Even where high-speed internet service is available, there are households without the ability to afford computers and broadband connections.

Overall, 21.2 percent of Iowa’s residents lack a broadband subscription, even with mobile access included,

according to the most recent Bureau of the Census data (American Community Survey 2018, five-year averages). This is slightly higher than the national average, which is 19.6 percent of the U.S. population, reflecting the rural nature of the state. Yet, 37.2 percent of Davis County residents lack a broadband

Wide differences across Iowa counties in access to broadband
Percent of population with broadband — any type



Source: U.S. Bureau of the Census, American Community survey, 2018, 5-year averages

subscription, as do 36.5 percent of the population of neighboring Van Buren County. Statewide, 47.3 percent of Iowa residents with annual household incomes of \$20,000 or less lack broadband

subscriptions — nearly half. The map above shows that Dallas, Johnson and Sioux counties have the highest broadband subscription rates in the state with over 85 percent of households having coverage, whereas less than 65 percent of the population has broadband in Davis and Van Buren counties. (See appendix)

Some private internet providers offered to extend low-cost offers or pledged to not cut off customers during the COVID-19 emergency, but these policies were uneven across providers and often poorly implemented (McCabe 2020). With public schools closed statewide by April 1 (and many in mid-March), many school districts scrambled to provide tablets for students and/or mobile hotspots in parking lots or school buses. Some school districts provided low-income families free broadband during the pandemic. Even with these efforts, the U.S. Bureau of the Census (2020) reported in a pulse survey conducted from May 14 to May 19, 2020, that 27.3 percent of U.S. households that earned \$25,000 or less and had schoolchildren did not always or usually have devices available for educational purposes, and 21.8 percent did not always or usually have internet access. In Iowa, 29.6 percent of these low-income households said that they did not always or usually have devices, and 25 percent did not always or usually have internet access for educational purposes.

Legislation in Iowa

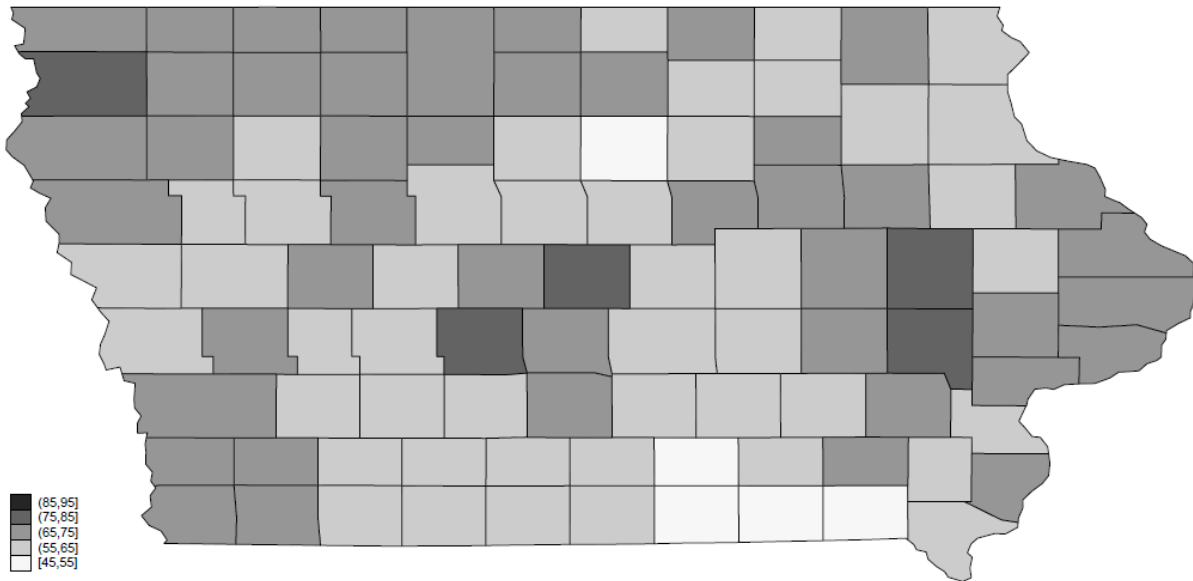
Bipartisan recognition has emerged in Iowa of the need for reliable broadband infrastructure offering speeds that are adequate for live-streaming, educational videos, online conferences, and medical diagnosis, and bandwidth to accommodate innovation and future development.

Legislation moving in the Iowa Legislature in 2020 (SF2400) takes steps on these issues. This report does not evaluate that legislation, but its effectiveness may be reviewed for its impact on expanding broadband access and addressing many issues raised in this report.

Some low-income households in both urban and rural communities rely on mobile access without a computer (Mossberger, Tolbert and Franko 2013; Mossberger, Tolbert and Anderson 2017). The map below shows the percentage of households by county with a broadband subscription, excluding those that have access only through a mobile phone plan.

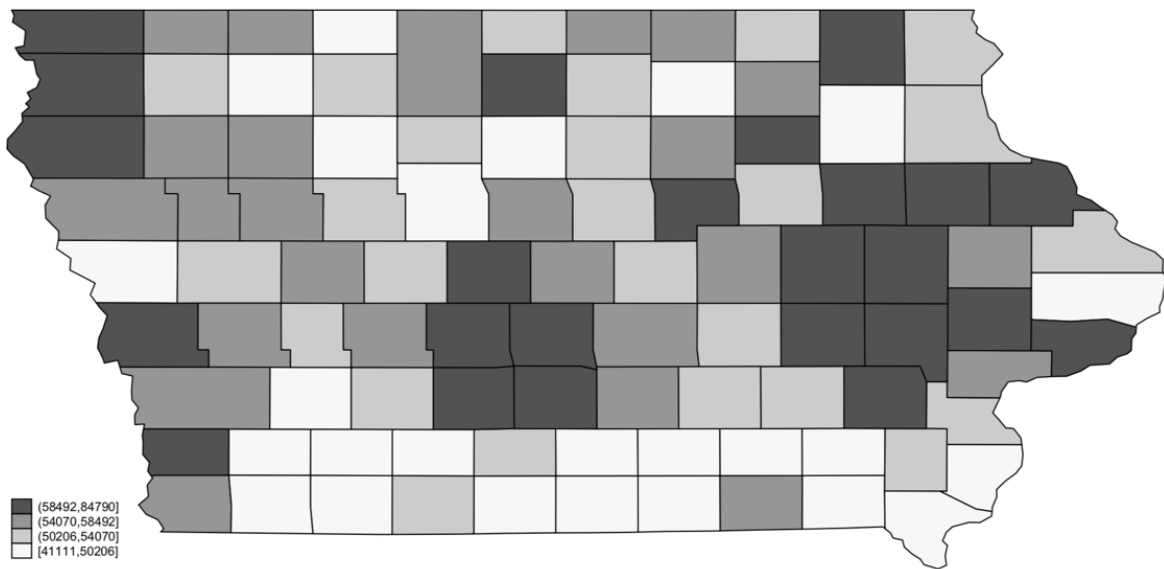
As can be seen, broadband subscription rates are considerably lower for all counties. The county average broadband subscription rate when excluding cell phone only plans drops over 10 percent, meaning that only 65 percent of the population has a broadband subscription that is not reliant on mobile connections (i.e. through a phone). In some counties this number drops as low as 45 percent. With small screens and virtual keyboards, cell phones are inadequate for doing homework, applying for jobs or social services, or accessing medical services online. The data caps that accompany many low-cost plans make minutes online a precious commodity and an unforeseen expense when they are exceeded. These less-connected, mobile-dependent internet users often turn to public libraries or Wi-Fi hot spots for homework, job search or other important needs, further losing access with the closure of public spaces. But the problem is not a short-term one that will simply be remedied as institutions open again.

Percent of Population with Broadband- Excluding Cell Phone Only



Inequalities in broadband infrastructure and use have significant social costs for individuals and communities even in “normal” times. Internet use is important for wages (DiMaggio and Bonikowski 2008), including for less-educated workers (Mossberger, Tolbert and McNeal 2008), and for jobs that offer economic mobility without a college education (Horrigan 2018; Shearer and Shah 2018). Iowa counties with higher broadband subscription rates generally have higher median income. Internet use matters in other ways - for civic engagement (Mossberger, Tolbert and McNeal 2008; Boulianne 2009 and 2015), citizen attitudes toward government (Tolbert and Mossberger 2006), and access to health information and resources (Schartman-Cyck et al. 2019).

Median Household Income- 2018



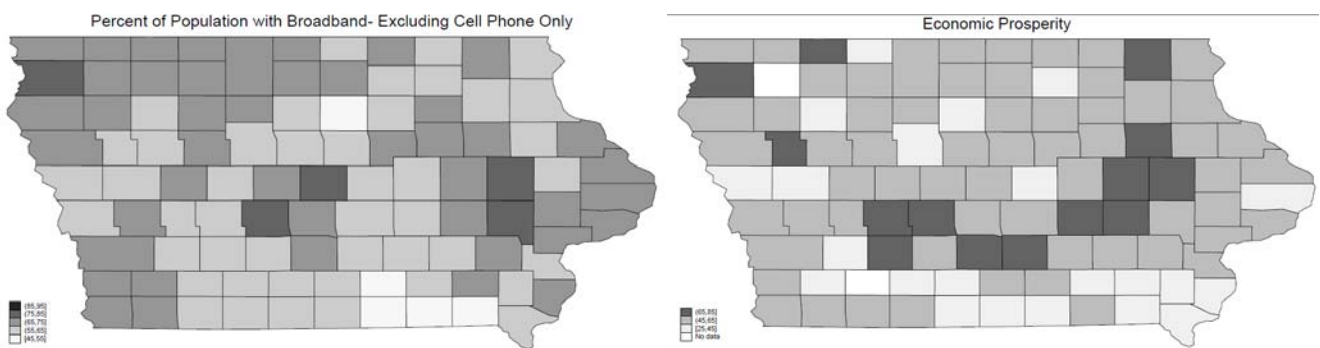
How Broadband Matters for Individuals and Communities

Broadband is a necessary resource for communities as well — for economic development, public health, public safety and emergency management, education and more. First, it is necessary to have reliable broadband infrastructure offering speeds that are adequate for live-streaming, educational videos, online conferences, and medical diagnosis today, and bandwidth to

accommodate innovation and future development. Many studies have demonstrated that broadband infrastructure produces economic benefits for communities (Gillett et al., 2006; Crandall, Lehr & Litan 2007; Holt & Jamison 2009; Mack 2014; Whitacre et al. 2014; Jayakar & Park 2013; Kolko 2012). Fast networks are needed to support smart city applications for traffic, public safety and smart grids in urban areas and to connect rural communities with distant hospitals and broader markets for goods and services. Dependable infrastructure with adequate speed, however, is only a first step.

The benefits of digital technologies increase with widespread adoption and use – as our research on broadband subscriptions shows (Mossberger, Tolbert and LaCombe forthcoming). According to the Brookings Institution, it is the “subscription gap” that is most prevalent, in rural and urban communities (Tomer et al. 2017). This matters for community outcomes, as well as for individuals left behind. From a public policy perspective, when a significant proportion of families in a school district lack broadband access and devices at home, educational quality suffers. Schools are unable to support classroom learning with homework or to prepare students for college or careers. State and local governments are less able to realize the cost savings and efficiencies of digital government.

Local communities with a larger percentage of the population with broadband subscriptions are more prosperous. Research shows they have better outcomes on a prosperity index that measures increases in jobs and businesses, poverty, residents in the workforce, housing vacancies, educational attainment, and adjusted income (Mossberger, Tolbert and LaCombe forthcoming). Tracking outcomes over nearly two decades nationally demonstrates that counties with higher percentages of broadband subscribers had higher levels of prosperity and recovered more fully from the last recession. This was true for urban, suburban and rural counties, controlling for other factors that affect local economies. Changes in median household income show that increases in broadband adoption lead later to higher median income in counties, indicating that broadband was a cause of this change. The two maps below compare broadband subscription rates (left) with economic prosperity (right). The areas with the highest rates of broadband subscriptions also have the highest levels of economic prosperity. Similar patterns emerge when looking at household median income.



Other recent research demonstrates how broadband use affects economic prosperity. GoDaddy, the world’s largest registrar of domain names, recently shared data on 20 million active domain name websites or “ventures” in the U.S. Roughly 80 percent of the domain name websites are for commercial activity, and many of them are microbusinesses, including about 30 percent who are solo entrepreneurs. The density of ventures per 100 residents predicts levels of prosperity, recovery from the last recession and median income as well, controlling for broadband subscriptions and other factors. Broadband provides the foundation, but how technology is used

has an even stronger effect on economic outcomes, across the nation's counties and zip codes (Mossberger, Tolbert and LaCombe 2020).

Policies for Now and the Broadband Future

Broadband access and adoption are resources for economic recovery following the pandemic, and for future growth moving forward. Broadband is needed for public services and healthy communities. Broadband is necessary for all individuals to participate in society and to have equality of opportunity; this was true before the pandemic, and will be increasingly so, with the prolonged social impacts of the virus.

States have flexibility during the current emergency to provide computers and internet access to eligible families using funds from Temporary Assistance to Needy Families (TANF). Further details are available from the US Department of Health and Human Services (<https://www.acf.hhs.gov/ofa/resource/q-a-use-of-funds?page=2>). Employment and Training funds for the Supplemental Nutrition Assistance Program (SNAP) can also be used for laptops, Wi-Fi hot spots and other expenses related to distance learning (<https://fns-prod.azureedge.net/sites/default/files/resource-files/SNAP-COVID-QA4.pdf>).

The federal CARES Act includes \$100 million for a USDA rural broadband program and another \$25 million for education and telemedicine, but this funding is minor compared to the need or even the \$7 billion for broadband stimulus programs appropriated during the last recession. The Federal Communications Commission is launching the first investments in a \$20.4 billion Rural Digital Opportunity Fund in October 2020 (Simpson 2020). Some states plan to spend CARES Act funds allocated to them for rural high-speed infrastructure, but the short timeline has made this difficult (Simpson 2020).

The HEROES Act, passed by the House and awaiting action in the Senate, includes an \$8.8 billion fund for Emergency Broadband Benefit for low-income individuals currently eligible for Lifeline phone discounts, or who have suffered a major income loss due to the pandemic. If passed, this would require the FCC to reimburse internet providers up to \$50 per month for home broadband. Providers could also be reimbursed up to \$100 per household for computers or tablets supplied to eligible households. The benefit would continue for the duration of the federally declared COVID-19 health emergency, plus an additional 6 months.

Congress has also proposed (but not yet passed) a longer-term Plan to Connect All Americans to Affordable Broadband Internet (Clyburn 2020). Over the course of the five-year plan, the Federal government would invest \$80 billion to deploy broadband nationally in unserved and underserved communities, provide \$5 billion for low-interest financing, establish an office to coordinate across Federal agencies, promote competition, require affordable options, protect rights of local governments to participate in public-private partnerships or municipal broadband, enhance payment support for low-income consumers, collect pricing data, and establish a \$1 billion State Digital Equity Capacity Program to provide grants for skills training.

States can play an important role in distributing these and existing loans and grants effectively, and in marshaling their own resources. Beyond the federal efforts, there are many ways that States can work with local governments and community-based organizations to address the needs in rural areas and in all low-income communities. This includes allowing local initiatives such as public-private partnerships or municipal broadband, especially when the market has failed to deploy adequate infrastructure. States can also support local efforts by providing grants and loans to assist in planning and implementation of infrastructure programs. Affordable internet access

should be required when there is public investment in infrastructure. Skills training, low-cost devices and information about discounted internet can be disseminated by local schools, libraries, hospitals, and nonprofit organizations, and states can support these efforts as well through funding. The current pandemic has underscored the need for intergovernmental and cross-sectoral efforts to effect meaningful change for a broadband future.

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The Iowa Policy Project thanks the authors for providing this summary of broadband issues facing Iowa. See their longer report on our website, www.iowapolicyproject.org. IPP is a nonprofit, nonpartisan public policy research and analysis organization in Iowa City. Founded in 2001, IPP is funded by foundation grants and donations from individuals and organizations.

Appendix

Summary Statistics for Broadband Subscriptions in Iowa's 99 Counties

Variable	Mean	Std. Dev.	Min	Max
Broadband Subscriptions Any Type	75.52525	4.234994	62.8	88
Broadband Subscriptions – Not counting cell phone only	64.61919	5.606168	48.5	80.6
Economic Prosperity Index 2018	53.00109	10.68119	28.35194	80.5407

Quartile Cut-offs for Iowa's 99 Counties—Broadband Access Tracks with Higher Economic Prosperity

Variable	25%	50%	75%
Broadband Subscriptions Any Type	73.4	75.6	77.9
Broadband Subscriptions – Not counting cell phone only	61.1	65	67.5
Economic Prosperity Index 2018	45.29	53.5	60.1