



IMPROVING RURAL BROADBAND ACCESS IN LAKE COUNTY, CALIFORNIA

CAROLYN ABRAMS, M.U.R.P.
SARA WATTERSON, M.A.
JONATHAN K. LONDON, PH.D.

CENTER FOR REGIONAL CHANGE
UNIVERSITY OF CALIFORNIA, DAVIS
JUNE 2021

Preferred Citation: Abrams, Carolyn, Sara Watterson, Jonathan K. London. 2021. Improving Rural Broadband Access in Lake County, California. UC Davis Center for Regional Change.

RURAL BROADBAND ACCESS IN LAKE COUNTY

INTRODUCTION

Broadband access is a critical factor in rural community economic development, impacting health and safety, education, access to jobs, and the operation of most businesses and enterprises. The California State Broadband Action Plan, established in December 2020, focuses on several long-term goals, including all Californians having access to affordable, high-quality broadband at home, schools, libraries, and businesses, as well as the training and support necessary for digital inclusion. Among the three long-term goals is Goal 2: “All Californians have access to affordable broadband and the devices necessary to access the internet.”

However, according to a recent statistic, nearly one quarter of Lake County residents do not have access to broadband ([California Dream Index](#)). Furthermore, this statistic does not describe the quality of the broadband, nor does it describe the demographics of those who are without access. Research has shown that rural communities and those with higher percentages of people of color are disproportionately impacted by the lack of broadband access and are at greater risk for experiencing the negative effects of this absence. The same is true for communities with high concentrations of low-income residents.

PURPOSE FOR REVIEW IN LAKE COUNTY

The Socioeconomic Subcommittee of the Blue Ribbon Committee for the Rehabilitation of Clear Lake identified universal access to broadband as one important area affecting the communities and economic vitality of the Clear Lake region. The Subcommittee requested more information about what work is being done in this area, what opportunities and challenges exist, and recommendations for moving forward.

METHODS

The CRC met with Valley Vision, a regional leader in the broadband field, to discuss the needs and challenges of implementing universal broadband in rural communities, such as Lake County. CRC staff also attended the California Economic Summit, held on December 3-4, 2020, where leaders across California came together to discuss inclusive and

sustainable growth. One of the main topics included “Connecting CA,” where the discussion focused on the current digital divide in California. The CRC drew on all of these sources for its research.

The CRC also gathered initial feedback on broadband recommendations from the Socioeconomic Subcommittee on April 20, 2021, coupled with informal discussions conducted in May 2021 with key individuals working on the issue of broadband in Lake County.

Further work on this topic involved a literature review to identify key issues and promising practices as it relates to rural broadband adoption and its connection to economic vitality.

FINDINGS: EMERGING KEY THEMES

The Clear Lake region is disproportionately affected by both the lack of broadband access and the lack of high-quality broadband

While a large portion of California does have access to broadband, the quality of broadband varies greatly, and vulnerable communities are more often saddled with low-quality, unstable options. Vulnerable communities are typically defined as those with higher percentages of older, non-English speaking, low-income residents.

CALIFORNIA BROADBAND ADOPTION RATES				
Income >\$100K a year	With high school degree	English-speaking Latinos	People ages 18-29	Non-Disabled
97%	71%	86%	84%	83%
Income <\$20K a year	Without high school degree	Spanish-speaking Latinos	People 75 and older	Disabled
52%	53%	57%	62%	64%
Source: California Emerging Technology Fund, Poll conducted by the Institute for Governmental Studies - January 2019. Statistics are cited for adoption at home with a computer or tablet.				

Infrastructure limitations have an impact on what businesses can operate in Lake County, who can work effectively there, and the overall quality of life. Broadband is essential infrastructure for residents, similar to utilities such as water and sewer. Given its significance, the availability of broadband needs to be the standard not the exception, and the economic vitality of Lake County will be impeded until quality broadband is accessible for all residents and businesses.

The pandemic has exacerbated the harmful impacts of the digital divide

The learning gap in K-12, already a documented inequality, has grown for those students and communities who cannot access their classroom online due to non-existent or low-quality broadband. The same applies to college students and adults who cannot work remotely due to lack of broadband access. Health and quality of life are also affected since lack of broadband

access can affect residents' ability to access tele-health care, vaccination appointments, important communications from school and work, and maintain vital social bonds.

Despite years of work to advance broadband access in Lake County, it remains a complex and challenging issue to resolve

The issue of broadband access is complicated, and there is not an easy solution. Frequent roadblocks include barriers to acquiring funds, the issue of service scale, and the topographical challenge of the county's mountainous region with a centrally located lake. A common concern among stakeholders is whether there is the capacity to solve this challenge.. Some Socioeconomic Subcommittee members pointed out that broadband remains a lofty undertaking because they're up against powerful Internet Service Providers (ISPs), and there isn't an obvious return on investment for them to establish broadband service in Lake County. It's clear that until there is willpower and momentum to support small place-based solutions, then communities are going to be stuck in this digital divide.

Concerns remain around trying to take on such a challenging issue, yet it's also clear that stakeholders are still willing to pursue promising strategies and resources that have the potential to address the scope of this problem.

Broadband crosses partisan lines

In California, rural legislative districts encompass large geographic areas with constituents that span the political spectrum. Nationally, the digital divide remains a stark issue and has been a key focus for both the Democratic and Republican Federal Communications Commission (FCC) chairmen over the past two presidential administrations. This positions broadband adoption as a bipartisan issue, which lends itself to collaboration at the local, state, and federal level.

The lack of access to high-quality broadband impacts a range of communities, and this issue can provide an opportunity for constituents to come together across political lines. Since rural broadband stands to benefit many, this issue also extends beyond residential customers and has the potential to engage varying sectors of the economy, given its impact on business operations and local enterprises

RECOMMENDATIONS AND PROMISING PRACTICES

Strengthen data collection at a granular level to more accurately reflect broadband access in the county

There remains a significant need for better data mapping of broadband service, especially as it pertains to the granularity and accuracy of the data. The specificity of the data is a key issue, because the current service figures rely on semi-annual self-reporting through the FCC-mandated Form 477. According to BroadbandNow, “there is a widely acknowledged flaw with Form 477 reporting: if an ISP offers service to at least one household in a census block, then the FCC counts the entire census block as covered by that provider.” This largely skews the data and provides a false representation of broadband access.

Additionally, the information that is needed to fully understand the limitations of broadband service is proprietary and most companies won’t provide detailed maps of where they serve and where they don’t, thus leaving further gaps in the data. As a key recommendation, funding should be secured to address the significant need for more granular broadband mapping, as well as ground truthing to test and verify the signals. This aligns with recommendations from FCC Acting Chairwoman Jessica Rosenworcel who established a Broadband Data Task Force to assess the existing service reporting requirements for ISPs and identify recommendations for changing the system.

According to BroadbandNow, “This task force should recommend removing the census block reporting and replacing it with address-level granularity as the national requirement for provider self-reporting. By doing so, we would eliminate the gaps created by counting hundreds – and sometimes thousands – of Americans as one entity.” These changes will be critical to advancing the issue, especially when it comes to establishing eligibility for federal or state funding.

Considering the number of initiatives that are currently being rolled out, such as federal initiatives like the [Rural Digital Opportunity Fund](#), the availability and accuracy of data will be crucial in order for funding to be efficiently and equitably used.

Support short- and long-term funding measures that enable widespread, high-quality broadband access in Lake County

In order to make broadband service universal in Lake County, it will be necessary to prepare funding applications to finance the technology necessary for reliable broadband in all of region’s communities. Considering the current prominence of this issue at the state and federal level, multiple funding opportunities are available to advance broadband adoption. Lake County should

qualify for increased federal funding for broadband, including opportunities such as the [National Telecommunications and Information Administration's \(NTIA\) Grants](#), [Rural Development Broadband ReConnect Program](#), [Federal Communications Commission Rural Digital Opportunity Fund \(RDOF\)](#), and [other funding sources](#) available through federal agencies, with the possibility of the massive federal infrastructure bill now being debated.

Funding opportunities should be pursued that would allow internet companies to make the startup costs more affordable and manageable for customers. Although the cost of service is a barrier, funding is especially needed to subsidize the cost of equipment for residential and business customers. For example, [Digital Path](#) (a WISP based in Chico, CA that provides high-speed, wireless internet in Northern California) was previously able to secure funding for customer premises equipment (CPE) which allowed the company to provide equipment to people at low or no cost.

Explore alternative methods for broadband access that might be better enacted in rural communities

Large internet service providers (ISPs) tend to have a monopoly on service, especially in rural areas. They continue to challenge the expansion of public options in rural areas, yet they refuse to provide service to these areas due to the higher cost and low return on investment.

Alternatively, small wireless internet service providers (WISPs) are emerging in some areas, building out local networks to customers who the major providers can't (or won't) serve in rural and low-income areas. WISPs offer an infrastructure solution that allows them to expand and reach typically underserved communities.

However, WISPs are often in competition with each other to lease out viable spaces for their services. As a potential solution, the county could become the internet provider and partner with the WISPs, leasing out space to these small enterprises to reduce their capital expenditures. For example, Lake County owns a portion of land on top of Mt. Konocti, including a five-acre parcel where antenna and cell towers are located. The tower site is a potential property that the county could leverage to provide a streamlined solution for WISPs, allowing them to expand service more efficiently and navigate the bureaucratic regulations.

It is also necessary to explore alternative economic models for the delivery of broadband, which have been successfully established for other key services. Alternative structures include electric co-ops and community service districts (CSDs), cell companies (e.g., the T-Mobile merger with Sprint includes rural 5G deployment), satellite internet, and antennas or other access points on public facilities (e.g., libraries, municipal centers, schools, community colleges). While this is

largely a rural issue, urban areas are also affected and can be called upon to apply pressure to change the regulations around large ISPs.

Create a coalition as an umbrella structure to increase broadband access and infrastructure in Lake County

A coalition is needed as a central body to support collaboration among stakeholders in the region working on the issue of broadband access. The umbrella coalition for broadband (also referenced in the Lake County Economic Development Strategy), could take on initiatives such as lobbying for legislative change that reflects the needs of rural areas and addresses the corporate monopoly on broadband. Additionally, they could be tasked with pursuing additional funding opportunities, or partnering with research centers or institutes to collect accurate data on broadband access.

In order for this to be effective, there should be a lead convener to activate and support this ongoing work. For example, the Lake County Chamber of Commerce has taken on champion projects the past two years, but the issue of broadband hasn't been well enough defined for the board to take it on as a priority. Additionally, the Lake Economic Development Corporation is in the process of convening organizations, volunteer business improvement groups, and other established entities into a Business Assistance Roundtable. Conveners such as these would be well-positioned to assume the lead role of organizing a broadband coalition and catalyzing this effort.

APPENDIX

Broadband adoption resources and models

[BroadbandNow Research](#) – “BroadbandNow Research endeavors to better understand the social, economic and political issues contributing to the digital divide in America. Research focuses on topics such as digital inclusion, municipal broadband, telecom legislation, emerging technologies and the impact of broadband on everyday life.”

[BroadbandUSA Program](#) – “The National Telecommunications and Information Administration’s (NTIA) BroadbandUSA program promotes innovation and economic growth by supporting efforts to expand broadband connectivity and meaningful use across America. BroadbandUSA serves state, local, and tribal governments, industry, and nonprofits that need to enhance broadband connectivity and promote digital inclusion.”

[California Emerging Technology Fund \(CETF\)](#) – “CETF provides leadership statewide to close the “Digital Divide” by accelerating the deployment and adoption of broadband to unserved and underserved communities and populations.”

[California Interactive Broadband Map](#) – “The California Public Utilities Commission (CPUC) collects data once a year to provide California residents a means to look up information about the broadband services available to them via the California Interactive Broadband Map. The data also provides a first look at area eligibility for California Advanced Services Fund ([CASF](#)) applicants. Equally important, the data inform public policies intended to make sure broadband is available throughout California, and to promote digital literacy and broadband usage.”

[California Forward](#) – “California Forward leads a statewide movement, bringing people together across communities, regions and interests to improve government and create inclusive, sustainable growth for everyone.”

[Crown Castle Connectivity Toolkit](#) – Crown Castle offers partnership opportunities for telecommunications companies to tap into their shared infrastructure model which allows WISPs and other telecommunications companies to scale up and reach populations that aren’t served by large ISPs.

[GIS Data and Broadband Maps](#) (2019) – “Fixed Wireless and Wireline maps and downloadable GIS data show broadband deployment and speeds as submitted by broadband providers and has been validated by the California Public Utilities Commission (CPUC). The Mobile broadband

data and maps represent coverage submitted by broadband providers AT&T Mobility, Sprint, T-Mobile, and Verizon Wireless.”

[Lake County Broadband Master Plan](#) (2019) – “The following Master Broadband Plan for Lake County aims to provide a comprehensive assessment of the current landscape of broadband services for residential and business customers, as well as recommendations for improving broadband coverage and service speeds, developing and implementing local government policies that can ease and support broadband infrastructure deployments, and improving broadband service adoption.”

[unWired Broadband Case Study](#) – Operating in Fresno, CA, unWired Broadband serves one of the nation's key agricultural regions in central California, making it the ninth largest fixed wireless provider in the country.

The [Connected Capital Area Broadband Consortium](#), managed by Valley Vision promotes strategic efforts to improve broadband access in Sacramento, Sutter, Yolo, and Yuba Counties within California’s Capital Region, paving the way for future-ready infrastructure and regional prosperity.

Broadband funding opportunities

National Telecommunications and Information Administration’s (NTIA) Grants:

<https://www.ntia.gov/grants-combined>

Rural Development Broadband ReConnect Program: <https://www.usda.gov/reconnect#anchor1>

Federal Communications Commission Rural Digital Opportunity Fund (RDOF):

<https://www.fcc.gov/auction/904>

Funding sources by agencies:

<https://broadbandusa.ntia.doc.gov/new-fund-search>

Works cited

Benda, Natalie C.; Tiffany C. Veinot, Cynthia J. Sieck, and Jessica S. Ancker, 2020. Broadband Internet Access Is a Social Determinant of Health! American Journal of Public Health 110, 1123_1125, <https://doi.org/10.2105/AJPH.2020.305784>.

Busby, John, Julia Tanberk, and Tyler Cooper, 2021. “BroadbandNow Estimates Availability for all 50 States; Confirms that More than 42 Million Americans Do Not Have Access to Broadband.”

BroadbandNow Research. <https://broadbandnow.com/research/fcc-broadband-overreporting-by-state>.

California Broadband Council, 2020. “Broadband Action Plan 2020: California Broadband for All.” <https://broadbandcouncil.ca.gov/wp-content/uploads/sites/68/2020/12/BB4All-Action-Plan-Final-Draft-v26.pdf>.

Eyler , Robert, 2018. “Lake County Economic Development Strategy.” Economic Forensics and Analytics. <http://www.lakecountyca.gov/Assets/Departments/Administration/Vision/Strategy.pdf>

Galperin, Herna, Francois Bar, Annette M. Kim, Thai V. Le, and Kurt Daum, 2020. “COVID-19 and the Distance Learning Gap.” Connected Cities and Inclusive Growth, Policy Brief #5. <http://arnicusc.org/wp-content/uploads/2020/04/Policy-Brief-5-final.pdf>