



34 Million Americans Lack a Broadband Connection and the Vast Majority – 19.4 Million as of February 2017 – Live in Rural Areas. “However, 34 million Americans still lack a critical connection to the wealth of opportunities that the cloud presents: a broadband internet connection. Of these, 23.4 million live in rural areas and their lack of broadband access means they are unable to take advantage of the economic and educational opportunities enjoyed by their urban neighbors.” (*“A Rural Broadband Strategy,”* 7/10/17)

“Rural Areas Have Significantly Slower Internet Access” Which Limits Their Ability to Take “Advantage of a Critical Component of Modern Life.” “Rural areas have significantly slower internet access, with 39 percent lacking access to broadband of 25/4 Mbps, compared to only four percent for urban areas. This rural/urban ‘digital divide’ in access severely limits rural populations from taking advantage of a critical component of modern life.” (Darrell M. West & Jack Karsten, *“Rural And Urban America Divided By Broadband Access,”* [The Brookings Institution](#), 7/18/16)

Rural Americans are Unable to Access Critical Government Services, Which Have Been Increasingly Brought Online Including Social Security and Taxes. “Furthermore, rural communities may be unable to access critical government services. From Social Security to FAFSA, government services are transitioning to online access. Tax forms and services are being increasingly streamlined through online portals and tools, and with limited broadband speed, rural America may struggle to access these services.” (Darrell M. West & Jack Karsten, *“Rural And Urban America Divided By Broadband Access,”* [The Brookings Institution](#), 7/18/16)

EDUCATION

6.5 Million Students Across 45 States Lack Access to High Speed Internet. “But 6.5 million students still don’t have that access, and EducationSuperHighway CEO Evan Marwell told The 74 that it may be getting more difficult for schools to obtain it for them. Part of the problem, he said, is that more than 2,000 schools, mostly in rural areas and small towns, lack the fiber optics needed for high-speed internet, which the Federal Communications Commission [FCC] defines as a minimum of 100 kilobits per second for each student. Those schools – spanning 45 states – are hard to reach, he said, and lately there has been a lag in approvals for projects to get them connected through the FCC’s E-rate program, which funds internet infrastructure and service for schools and libraries.” (Laura Fay, *“39 Million Students Get High-Speed Internet, But Some Schools Still Struggle To Close The Digital Divide,”* [the74million.org](#), 9/19/17)





Rural Schools Lack Access to High Speed Internet and “Pay More Than Twice as Much for Bandwidth.”

“This discrepancy in access inhibits rural communities in often unforeseen ways. While their YouTube stream may not be the highest quality, rural communities may also be unable to efficiently provide internet access to students in public schools. The FCC in 2013 established a standard of 100 Kbps per student, and by 2015, 77 percent of school districts met this standard. However, rural schools lack access to high-speed fiber and pay more than twice as much for bandwidth. In a growing world of personalized online curricula, internet-based research, and online testing, this severely restricts rural students from educational opportunities their urban counterparts may enjoy.” (Darrell M. West & Jack Karsten, “Rural And Urban America Divided By Broadband Access,” [The Brookings Institution](#), 7/18/16)

Rural Students Lag Behind Suburban Students in Math. “American students living in the suburbs are outpacing their urban and rural counterparts in mathematics achievement, with Asian and white students scoring the highest among all races and ethnicities, and students from higher socioeconomic backgrounds doing better overall, according to new research from the Carsey Institute at the University of New Hampshire.” (“Carsey Institute At UNH: Suburban Students Outpace Rural And Urban Peers In Math,” *UNH Today*, 6/19/12)

Seventy Percent of Teachers Assign Homework and Research Requiring a Broadband

Connection. “At a time when 70 percent of teachers assign homework and research that requires a broadband connection, this means there are millions of children in this country who are not able to access the tools and information they need to thrive in school and gain the skills and knowledge they will require as they move on to college or enter the workforce.” (“A Rural Broadband Strategy,” 7/10/17)

ECONOMIC OPPORTUNITY & PRECISION AGRICULTURE

Lack of Modern Internet Connection Discourages Online Commerce, Limits Ability to Use New Technology for Agriculture and Makes it Tough to Engage in Any Work Requiring

Online Access. “Counties without modern internet connections can’t attract new firms, and their isolation discourages the enterprises they have: ranchers who want to buy and sell cattle in online auctions or farmers who could use the internet to monitor crops. Reliance on broadband includes any business that uses high-speed data transmission, spanning banks to insurance firms to factories.” (Jennifer Levitz & Valerie Bauerlein, “Rural America Is Stranded In The Dial-Up Age,” *The Wall Street Journal*, 6/15/17)





Oklahoma St. Professor Brian Whitacre: “My own research reveals that broadband adoption can help improve the economy in these rural areas (including increasing income, lowering unemployment rates and creating jobs).” (*Brian Whitacre, “Technology Is Improving – Why Is Rural Broadband Access Still A Problem?” The Conversation, 6/8/16*)

“Rural Communities with Broadband Access Generally Had Higher Incomes and Lower Unemployment Rates Than Communities with Less Broadband Deployment.” “Here in the United States, a 2015 study concluded that rural communities with broadband access generally had higher incomes and lower unemployment rates than communities with less broadband deployment.” (*“A Rural Broadband Strategy,” 7/10/17*)

Broadband Access Helps Farmers Find New Customers and More Affordable Supplies.

“Access to broadband, and particularly the Internet of Things, promises to enhance agricultural productivity in exciting ways. Broadband access has given farmers the ability to search for new customers, find buyers willing to pay higher prices, and identify the most affordable sources of seeds, fertilizers, and farm equipment.” (*“A Rural Broadband Strategy,” 7/10/17*)

“Farmers Also Use Advanced Wireless Technologies to Conserve Resources and Boost Yields, From Web-Based Irrigation Scheduling to ‘Prescriptive Planting’ Technologies That Tell Farmers How to Increase Their Outputs Based on Data Gathered by Tractors.”

(*“A Rural Broadband Strategy,” 7/10/17*)

HEALTHCARE

Better Broadband Access Means Improved Healthcare Outcomes for Underserved Communities. Patients Using Telemedicine, For Instance, Could Save Several Thousand Dollars Annually in Travel Costs.

“Patients who avail themselves of telemedicine services do not incur travel expenses that they otherwise would to visit a far-off treatment site. In quantifying this potential cost saving, [Brian E.] Whitacre [associate professor and extension economist in the department of Agricultural Economics at Oklahoma State University] looked at the average distance traveled, the average cost per mile,





and the number of encounters per year – taking into account the percentage of encounters that required immediate attention, as opposed to those who could wait until a specialist was available locally. The estimated annual cost savings ranged from \$2,303 to \$109,080, with a mean of \$32,671 and a median of \$24,210.” (Rick Schadelbauer, “Anticipating Economic Returns Of Rural Telehealth, The Rural Broadband Association, 3/17)

Telemedicine Could Mean Tens of Thousands in Savings for Rural Hospitals. “In looking at hospital cost savings, Whitacre operated under the assumption that ‘a group of physicians specializing in a particular modality (such as radiology or oncology) in a more urban area can [through the use of telemedicine] then market themselves to several rural hospitals and serve a larger number of hospitals and serve a larger number of patients, which supports the idea that telemedicine increases efficiency.’ Whitacre looked at two examples involving converting radiology and psychology consultations to telemedicine. In one example, the hospital reduced its use of a full-time radiologist from five days a week to one. Using rural specialists’ salaries from the Physician Compensation and Production Survey, the estimated annual cost savings was \$101,600. In another example, a hospital using a part-time radiologist and psychiatrist eliminated the need for these specialists altogether. In this case, the estimated annual cost savings was \$61,600.” (Rick Schadelbauer, “Anticipating Economic Returns Of Rural Telehealth, The Rural Broadband Association, 3/17)

THE SOLUTION

Connect Americans Now (CAN) has a plan to eliminate the rural broadband gap by July 4, 2022. Unlocking a technology model that uses a combination of television white spaces spectrum, wireless technology, LTE fixed wireless and satellite coverage will achieve the mission while reducing operating costs by roughly 80 percent compared to fiber cables alone.

The Federal Communications Commission (FCC) has the ability to make this goal a reality by ensuring the continued use of the spectrum needed for this all-of-the-above technology model.

TV White Spaces Will Be Able to Reach 80 Percent of The Nation’s Rural Population.

“Specifically, TV white spaces will provide the best approach to reach the 80 percent of this underserved rural population that live in communities with a population density between two and 200 people per





square mile. Satellite coverage should be used for areas with a population density of less than two people per square mile, and fixed wireless and limited fiber to the home should be used for communities with a density greater than 200 people per square mile.” (Brad Smith, “A Rural Broadband Strategy: Connecting Rural America To New Opportunities,” Microsoft, 7/10/17)

- **“The Best Approach to Reach Approximately 80 Percent of This Underserved Rural Population.”** “TV white spaces is expected to provide the best approach to reach approximately 80 percent of this underserved rural population, particularly in areas with a population density between two and 200 people per square mile.” (“A Rural Broadband Strategy,” 7/10/17)

CAN Supports a Hybrid Broadband Model Involving TV White Spaces That is 80 Percent Cheaper Than Fiber Optic Cables And 50 Percent Cheaper Than LTE Wireless Technology.

“Specifically, a technology model that uses a combination of the TV white spaces spectrum, fixed wireless, and satellite coverage can reduce the initial capital and operating costs by roughly 80 percent compared with the cost of using fiber cables alone, and by approximately 50 percent compared with the cost of current LTE fixed wireless technology.” (Brad Smith, “A Rural Broadband Strategy: Connecting Rural America To New Opportunities,” Microsoft, 7/10/17)

