

Fiber’s Positive Impacts on Communities Run Deep

Fiber-based broadband improves lives, creates jobs, improves health care and education and helps communities grow and thrive as part of the digital economy.

By Deborah Kish / *Fiber Broadband Association*

Technology has made a significant impact on people’s lives in a variety of ways. Over the years, new technologies have made life easier, made work more efficient, provided safety and security, and impacted the environment.

All new technologies are designed with the goal of improving lives. In my

view, the internet – more specifically, fiber-fueled internet – has had the most significant impact on society and entire communities.

COMMUNITY COST SAVINGS

A 2020 study by Professor Bento J. Lobo, Ph.D., CFA, the First Tennessee Bank Distinguished Professor of

Finance at the University of Tennessee at Chattanooga, analyzed the benefits of fiber in Hamilton County, Tennessee, which includes Chattanooga.

As shown in Table 1, cost savings were recognized in an analysis based on various factors, including the size of the community, the average residential monthly electric bill, and the ratio of fiber access fees. The study found that the community realized an annual cost savings of \$144 million, or \$930 per household over 10 years.

CLOSING THE DIGITAL DIVIDE

It’s long been known that the lack of adequate, high-speed broadband availability in rural areas compared with metropolitan areas continues to be a challenge in North America. That challenge was exacerbated by the pandemic in 2020, forcing nearly all communication to be conducted from home, further exposing the insufficiency or lack of broadband available in many rural areas.

Furthermore, the pandemic brought forth an awareness that most (not all) businesses can operate with a remote workforce and workers relocated to rural areas, away from crowded cities. However, with little to no access to the internet, the result is lower



	Fiber Transfers to Electric (\$000)	Annual Electric Revenues (\$000)	Fiber Transfers as % of Electric Revenues	Average Monthly Residential Electric Bill	Number of Residential Meters	Annual Community Savings
2011	\$11,802	\$548,766	2.15%	\$130.00	148,033	\$4,966,516
2012	\$17,154	\$558,125	3.07%	\$130.72	148,817	\$7,174,799
2013	\$19,761	\$552,627	3.58%	\$131.78	149,886	\$8,475,588
2014	\$22,997	\$564,623	4.07%	\$131.69	150,961	\$9,716,519
2015	\$29,568	\$553,139	5.35%	\$132.19	152,503	\$12,931,397
2016	\$32,233	\$549,421	5.87%	\$136.13	154,273	\$14,784,971
2017	\$38,534	\$567,035	6.80%	\$140.76	155,745	\$17,877,613
2018	\$42,678	\$567,058	7.53%	\$140.11	157,547	\$19,935,978
2019	\$49,541	\$570,576	8.68%	\$140.97	159,504	\$23,427,761
2020†	\$53,768	\$572,259	9.40%	\$139.32	163,020	\$25,607,481
Total	\$318,036		5.65%#			\$144,898,624

Source: EPB and author calculations. Fiber transfers to the Electric division are access fees/rents and O&M allocations. † Electric revenues for 2020 are estimated. # average.

productivity, lagging education and poorer health outcomes. Bringing fiber broadband to the home can permanently close the rural high-speed broadband availability divide and offer higher productivity, the ability to learn remotely, and valuable resources to residents.

AN ECONOMIC BOON

The benefits of fiber broadband go far and wide. It is less costly to maintain compared with other technologies, and it brings value to businesses and communities.

The ebbs and flows of economies often take a toll on communities.

Businesses relocate to less expensive areas to keep profit margins high, sometimes leaving a once-thriving community a ghost town.

Though it was not necessarily a ghost town, Wilson, North Carolina, in 2005 found itself facing a significant challenge after most manufacturing businesses and the tobacco industry moved out, resulting in a 9 percent unemployment rate. In 2008, the last economic crash, Wilson turned things around by creating the Greenlight all-fiber network, a 10 gigabit symmetrical Ethernet project completed by 2010. The community completed the project

Category	Source	\$ Millions	% of total
Economic Development	Business Investments	\$962.8	35.7%
	Startup Funding	\$244.4	9.1%
	Real Estate Development	\$141.6	5.3%
	PILOT	\$59.9	2.2%
Smart Grid	Smart Grid	\$750.2	27.8%
Business Effects	Productivity Gains	\$74.31	2.8%
Household Effects	Consumer Surplus	\$128.8	4.8%
	Residential Bill Savings	\$144.9	5.4%
Community Effects	Health Care	\$18.17	0.7%
	Telecommuting	\$90.62	3.4%
	Education	\$29.83	1.1%
	Publicity	\$47.49	1.8%
	Other	\$3.65	0.1%
Total Value		\$2,696.73	100.0%
Total Jobs		9,516	
Incremental Value-to-Cost Ratio		4.42x	

Source: Ten Years of Fiber Optic and Smart Grid Infrastructure in Hamilton County, Tennessee

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The FBA is developing profiles about the local impacts of fiber, aiming to quantify the economic and societal benefits fiber brings to the communities where it is deployed.

on budget and one year ahead of schedule, and it made its first operating profit in less than a year while continuing to grow. The community now offers affordable, high-speed, reliable broadband to residents and businesses and created the GigEast Exchange, a local technology hub and networking space for community members to use.

After the fiber network builds, businesses began to thrive in Wilson, and the city attracted new companies to the area. Tobacco farming returned, and the unemployment rate dropped more than 2 percent. In 2019, Wilson was ranked 10th among the top best places in the country to start a business.

Another example of a thriving community built on fiber is in western Massachusetts, where Westfield Gas & Electric took the initiative to provide a community in Hampden County with reasonably priced, high-speed symmetrical broadband service known as Whip City Fiber via a fiber optic infrastructure.

Previously deployed technologies, such as DSL, satellite and cable, provided low speeds and were cost prohibitive in places where adoption was low. The community began asking for better alternatives. Westfield is now one of the first cities in Massachusetts to offer 1 gigabit symmetrical Ethernet, and the community generated more than \$88 million annually in job-related benefits attributed to its fiber broadband network. For more information on Westfield Gas & Electric, see www.understandfiber.org/case-studies/westfield-massachusetts-leading-with-fiber.

COMMUNITIES TAKE ACTION

Closing the digital divide has long been viewed as a governmental undertaking, but some communities take the bull by the horns. In 2000, the incumbent local exchange carrier in Roseburg, Oregon, had reached service capacity. Upgrading would have been costly, and ultimately that cost would be passed on to consumers, which the community did not receive well. In response, the Douglas Fast Net all-fiber network was formed, becoming one of the first ISPs in the state offering symmetrical, 1-Gbps internet service.

The network is profitable and brings value to the community by allowing people to learn and work from home productively. It was instrumental in ensuring communications were up and running when wildfires destroyed more than 130,000 acres, and more than 1,000 people were evacuated.

Fiber is also responsible for providing medical facilities with the ability to transmit important, large-file medical records such as images, CT scans and MRIs. Fiber is estimated to have saved the county more than \$573 million, and fiber has driven more than \$25 million in annual revenue to the education system. See www.understandfiber.org/case-studies/douglas-county to read the Fiber Community Profile about Roseburg.

FIBER IS GOOD BONES

A house with “good bones” or a good foundation will be long-lasting and something that can be built on and provide increased value. Similarly, an all-fiber network provides the good bones or foundation a city or community can build on.

To prove this, the Lobo study broke down the estimates of the value of fiber

optic and smart-grid infrastructure into five segments: economic development, smart grid, business effects, household effects and community effects (see Table 2 on previous page). It indicated that the economic value of the fiber optic infrastructure at a minimum exceeds \$2.69 billion and 9,516 jobs over 10 years.

THE PROOF IS IN THE RESEARCH

The Fiber Broadband Association has begun developing a series of profiles about how fiber impacts communities from various angles. The goal is to quantify the economic and societal benefits fiber brings to the communities where it is deployed. The profiles provide valuable quantitative and qualitative information on how fiber broadband improves lives, creates jobs, improves health care and education, and helps communities grow and thrive as part of the digital economy.

For the initial phase of this project, we selected five communities representing different regions of the country, served by a variety of community broadband providers (rural operators, utilities, cooperatives and municipally owned) that have had fiber broadband available for a minimum of five years. For more information about FBA’s research program, see <https://www.fiberbroadband.org/p/cm/ld/fid=978> or contact Deborah Kish (dkish@fiberbroadband.org). ❖



Deborah Kish is the vice president of research and workforce development for the Fiber Broadband Association.