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## **Executive Summary**

Despite rapidly increasing subscribership to high-speed broadband services over the last decade, not all Americans are connected in 2021. The Federal Communications Commission (FCC) estimates that 14.5 million Americans lack reliable broadband connections.<sup>1</sup> We agree that making access to broadband available where it is not currently operating is a critical national priority. However, some politicians are advocating for policies that have already been tested and failed, most notably, the policy of having local governments take over the role of builder and operator of commercial broadband networks for the stated purpose of reducing consumer prices and increasing service adoption.

Whether this is an effective policy or not is not just an academic question. A number of municipally-owned and operated broadband networks have come and gone in the last decade, providing us with real data to assess and determine the efficacy of this policy.

This study focuses on the operational performance of government-owned networks (GONs) and their ability to function as a viable and cost-effective high-speed network that better serves consumer needs. This study reviews and analyzes the operational performance, consumer impacts, and policy implications associated with the establishment of GONs as a substitute for privately-operated broadband services. The study consists of four main parts:

<sup>&</sup>lt;sup>\*</sup> The authors are with the American Consumer Institute, a nonprofit education and research organization. For more information about the Institute, visit www.TheAmericanConsumer.Org. <sup>1</sup> For the purpose of its estimate, the FCC defines broadband services as an "always on" highspeed Internet connection with a minimum throughput of 25 Mbps download speed and 3 Mbps upload speed. This means that high-speed service coverage and subscriptions from traditional satellite internet providers, 4G wireless services, and DSL services are often not included in the FCC's count. See, "Fourteenth Broadband Progress Report," U.S. Federal Communications Commission, January 13, 2021, https://www.fcc.gov/reports-research/reports/broadbandprogress-reports/fourteenth-broadband-deployment-report.

- The first section discusses the government production and provision of broadband services versus the private sector, and it draws key comparisons between the two;
- Next, we look at whether the structure and premise of municipality-owned services lead to financial and operational performances that are anticompetitive and costly, leading to higher prices and reduced consumer welfare;
- We then discuss the specific problems with municipal networks and offer an extensive list of examples where GONs have failed consumers; and
- Last, we provide concluding thoughts on the implications of operations by municipal broadband providers and their impacts on consumers and taxpayers.

Building on the plethora of empirical research on the ability of these networks to deliver access to reliable, high-quality, and affordable broadband, this study seeks to provide a survey of the evidence. The implications are critical since any decision-making to close the digital divide should be corroborated by empirical evidence, not rigid ideologies detached from reality and not by a philosophy that more government is necessarily the right solution for consumers and taxpayers.

As this analysis will demonstrate and our many examples will show, overall, public provision of broadband services often leads to unprofitable operations that push the recovery of losses to taxpayers and to other public services, and it creates barriers to entry which displace and crowd out private investment and competition. As a result, GONs services create an anticompetitive environment that ultimately raises consumer costs. Based on this, we conclude that GONs are precisely what policymakers and regulators should want to avoid if encouraging broadband investment, increasing adoption, and improving consumer welfare are public goals.

## The Economics of Public vs. Private Provision

Private investment of ubiquitous broadband networks produces sizable increases in employment, economic output, and consumer welfare benefits. Over the years, some municipalities have begun to build telecommunications and broadband networks on their own, displacing or discouraging private investment. Thus, before looking at how municipality-owned production of broadband services have performed, it is helpful to review the well-documented economic literature on government production of private goods.  $^{\rm 2}$ 

Professors Bennett and Johnson reviewed numerous studies that compared the performance of governmentally and privately produced services, including refuse collection, fire protection, debt collection, ship repair, electricity services, airline services, and ambulatory care, and other services.<sup>3</sup> Their findings showed government production was far more costly than private production. They also found government financial data often excluded comparable costs (such as net interest, pensions, taxes, capital costs associated with land and buildings, and opportunity costs) that, when included, made government production twice as costly as private production. Bennett and Johnson's conclusions confirm earlier findings that government production of goods and services came at roughly twice the cost as private production.<sup>4</sup>

Other economists also corroborate the success of subsequent deregulation and privatization that has swept much of the globe over the last fifty years. There is ample evidence that industry deregulation in the U.S., particularly in airlines, trucking, railroads, long distance telecommunications, and brokerage services, led to a decline consumer prices, increases in productivity, the development of intermodal competition, growing consumer demand, and large increases in consumer welfare benefits – collectively equaling over well of \$100 billion per year in just the U.S.<sup>5</sup>

Looking specifically at broadband investments, private companies invested \$78.1 billion in 2019 alone.<sup>6</sup> Even in 2009, when industry investment was at its lowest, that figure stood at \$64 billion. These statistics emphasize that even in down years, private

<sup>&</sup>lt;sup>2</sup> Portions of this study were adapted from Steve Pociask, "Comments of the American Consumer Institute," Federal Communications Commission filed "In the Matter of Electric Power Board and City of Wilson Petitions to Preempt State Laws," WCB Docket No. 14-115 and 14-166, https://ecfsapi.fcc.gov/file/7521825516.pdf.

 <sup>&</sup>lt;sup>3</sup> James T. Bennett and Manuel H. Johnson, *Better Government at Half the Price: Private Production of Public Services*, Caroline House Publishers, Inc. Ottawa IL And Ossining, NY, 1981.
<sup>4</sup>" The Bureaucratic Rule of Two." See Thomas E. Borcherding, "The Sources of Growth in Public Expenditures in the U.S. 1902-1970," Budgets and Bureaucrats: The Sources of Government Growth, ed. Thomas E. Borcherding, Duke University Press, Durham, NC, 1977, p.2.
<sup>5</sup> For specific estimates of the benefits of deregulation see Elizabeth E. Bailey, "Price and Productivity Change Following Deregulation: The U.S. Experience," *The Economic Journal*, March 1986, pp. 1-17; Clifford Winston, "Economic Deregulation: Days of Reckoning for Microeconomists, *Journal of Economic Literature*, Vol. 31, Sept. 1993, pp. 1263-1289; and Robert Crandall and Jerry Ellig, "Economic Deregulation and Customer Choice," Center for Market Processes, George Mason University, Fairfax, VA, 1996. Regarding telecommunications, see Thomas M. Lenard, "Government Entry into the Telecom Business: Are the Benefits Commensurate with the Costs?" *Progress and Freedom Foundation*, Progress on Point release 11.3, Feb. 2004.

<sup>&</sup>lt;sup>6</sup> Mike Saperstein, "Broadband Investment Remains High in 2019," USTELECOM, https://www.ustelecom.org/research/broadband-investment-remains-high-in-2019/.

providers are capable of surpassing the levels of actual and proposed federal investments.

Private investments have resulted in significant increases in speeds and an improvement in the quality of service for consumers. For example, reports by USTelecom showed that internet speeds had increased dramatically over the last several years. Specifically, comparing 2015 to 2021, these reports estimated the average download speed for entry-level service, the most popular service, and the fastest broadband service to have increased by 61%, 126%, and 77%, respectively.<sup>7</sup>

From a competition perspective, it is important to note that according to FCC data, as of June 2020, 76% of the U.S. population had at least two fixed wireline broadband providers offering 25/3 Mbps speeds and over 57% had at least two options for 100/10 Mbps speeds.<sup>8</sup> These competing provider coverage figures from mid-2020 mark the continuation of an unmistakable pro-competitive trend in network access dating back to at least 2018.<sup>9</sup>

Furthermore, new technologies seek to further foster broadband competition and will soon be online. Once fully built out, for instance, 5G services could reach more than one gigabit speeds. In addition, TV White Spaces — the unused spectrum in between TV channels — is a wireless technology that is beginning to offer a cheap and viable means to connect rural consumers to the internet at high speeds. Wireless services, are the best way to reach consumers without laying fiber to reach remote communities.<sup>10</sup>

New satellite systems are also increasingly a critical part of a ubiquitous broadband infrastructure. These new low earth orbit Non-Geostationary Satellite Orbit constellations, such as Amazon's Kuiper constellation and SpaceX's Starlink services, offer to connect unserved populations in rural and remote areas with potentially multi-gigabit

<sup>&</sup>lt;sup>7</sup> "Entry-Level Broadband Pricing Dropped in 2021, USTelecom," https://www.ustelecom.org/wpcontent/uploads/2021/07/USTelecom\_BPI\_entry-level.pdf. Also see, Arthur Menko, "2021 Broadband Pricing Index," Business Planning, Inc for USTelecom, https://ustelecom.org/wpcontent/uploads/2021/05/2021-Broadband-Pricing-Index-Report.pdf.

<sup>&</sup>lt;sup>8</sup> Seth Cooper, "The Biden Executive Order's Regulatory Proposals: Broadband Consumers and Competition Would Be Harmed," Free State Foundation, *Perspectives from FSF Scholars, August 4, 2021, Vol. 16, No. 41,* https://freestatefoundation.org/wp-content/uploads/2021/08/The-Biden-Executive-Orders-Regulatory-Proposals-\_-Broadband-Consumers-and-Competition-Would-Be-Harmed-080421.pdf.

<sup>&</sup>lt;sup>9</sup> Ibid.

<sup>&</sup>lt;sup>10</sup> Krisztina Pusok, "With Additional Broadband Competition Consumers Could See Reduced Costs for Internet Services," American Consumer Institute, June 3, 2020,

https://www.theamericanconsumer.org/2020/06/with-additional-broadband-competition-consumers-could-see-reduced-costs-for-internet-services/.

speeds, and they will provide connectivity for broadband services in places that have never experienced any.<sup>11</sup>

With significant private investments in broadband, increased competition, and a greater deployment of non-traditional broadband access technologies, the U.S. will soon close the digital gap. But, as more providers enter the market in the next couple of years, the ability of GONs to garner a sizable market share of broadband subscribers will diminish, as will their financial viability.

The next section will explore the extent that government production and provision of broadband services are beset with waste and inefficiencies, when compared to the private sector, thus exhibiting dismal financial and operation performances that are anticompetitive and costly, lead to higher prices and reduce consumer welfare.

# The Structure and Premise of Municipality-Owned Communications Services

Interest in GONs gained some popularity when broadband deployment lagged in some rural markets.<sup>12</sup> Because municipality-owned electric utilities have an existing market presence, construction capabilities, rights-of-way, and, in some cases, fiber-optic networks, it seemed natural to allow them to build a broadband network, as well as telecommunications and cable TV services. The idea was that these companies would have lower costs due to economies of scale and scope, resulting from joint production of power, cable, telephone services, and Internet access services.

As several municipalities began offering broadband, other municipally-run broadband service providers were established. Several studies investigated the financial performance of these early projects, including Fuhr (2014) and Lenard (2004). In general, their reports showed that all of the municipal electric utilities' telecommunications ventures were unprofitable, averaging \$770 in losses per subscriber. However, these estimates are likely conservative since municipal companies receive preferential access to rights-of-way and reduced costs from the use of public property and capital, as well as pay no taxes. In addition, some costs are not always included in the income statements of government services, making them difficult to compare with private enterprises. Some of

<sup>&</sup>lt;sup>11</sup> Steve Pociask, "Comments of the American Consumer Institute RE: RM-11768: Petition for Rulemaking to Permit MVDDS Use of the 12.2-12.7 GHz Band for Two-Way Mobile Broadband Service," November 17, 2020, https://www.theamericanconsumer.org/2020/11/coalition-files-with-fcc-regarding-mcdds-petition/.

<sup>&</sup>lt;sup>12</sup> Lennard G. Kruger and Angele A. Gilroy, "Municipal Broadband: Background and Policy Debate," Congressional Research Services, April 6, 2016.

these results are summarized below and provide an economic assessment of these early government ventures.<sup>13</sup>

Company/City	Services	Performance
Glasgow Electric Plant Board / Glasgow, KY	Cable, High-Speed Data and Telephone	Lost \$716 per household
Paragould City & Light Paragould, AR	Cable and Telecommunications	Lost \$641 per household
Negaunee, MI	Cable and High-Speed Services	Lost \$124 per household
Click! Network Tacoma Public Utilities Tacoma, WA	Telecommunications, CATV, High-Speed Data and Internet Services	Lost over \$700 per customer
OptiNet Bristol, VA	Fiber Network, Telephone, Data and Cable	Lost \$2,100 per customer
Hometown Utilicom Kutztown, PA	Fiber Optic and High-Speed Services	Lost \$624 per customer
Ashland Fiber Network Ashland, Oregon	High-Speed Internet and CATV	Lost \$480 per customer

# Telecommunications and Broadband Services: Municipality-Owned Ventures Cited in Early Reports

Note: This information was collected from Thomas M. Lenard, "Government Entry into the Telecom Business: Are the Benefits Commensurate with the Costs?" Progress and Freedom Foundation, Progress on Point release 11.3, Feb. 2004. Comparisons of performance cover different time spans.

So far, we have shown that early municipality-owned ventures were failures from the beginning. Next, we discuss how these broadband ventures were subsequently sold, and some ventures continued with the help of implicit subsidies tacked onto consumers' taxes and utility bills.

<sup>&</sup>lt;sup>13</sup> Joseph P. Fuhr Jr. "Who Should Provide Broadband Access?" *The Journal of the James Madison Institute*, Winter-Spring 2014, pp. 45-46. At the permission of Professor Fuhr, the following examples include excerpts from his research.

## **Problems with Municipal Networks**

GONs businesses have a number of problems that make them poor producers of private goods and services. First, they lack the incentives to maximize returns on investment while minimizing costs. Unlike private firms, managers of government-run enterprises often seek to maximize their workforce and spend their budgets.<sup>14</sup> As a result, they are prone to be wasteful and sometimes create subsidized pricing as a means to shift costs to other services.<sup>15</sup>

Government enterprises can sustain inefficient operations by being financially bailed out by taxpayers and by pushing their cost overruns to other government services. Specifically, government enterprises can sustain inefficient operations by being financially bailed out by taxpayers and by pushing their cost overruns to other government services, like municipal electricity, sewer and water, and other public utility services. As a result, municipally-owned broadband services can exhibit gross inefficiencies, poor quality of service, and even slower speeds, while putting the public on the hook to cover the cost of its failures. On the other hand, the public is not obligated to pay for the failures of private markets. For this reason, municipally-owned network services provide a formidable barrier to competitive entry.

In secondary municipal markets, these problems become even more magnified and harmful for consumers since these markets can sustain so few competitors. In these cases, municipally-run services become monopolies, thereby completely locking out private investment and competition. These municipal businesses can produce the same bad outcomes as monopolies – higher prices and lower output – exactly what policymakers and regulators should want to avoid, and exactly what the spirit of the Telecommunications Act of 1996 attempted to remedy.

In fact, the mere threat of entry by municipal broadband service providers could be sufficient to deter private investment into these secondary markets.<sup>16</sup> Allowing municipalities to provide broadband services will make Internet Service Providers and investors think twice about entering these smaller markets.

 <sup>&</sup>lt;sup>14</sup> James T. Bennett and Manuel H. Johnson, *Better Government at Half the Price: Private Production of Public Services*, Caroline House Publishers, Inc. Ottawa IL and Ossining, NY, 1981.
<sup>15</sup> Referred to as "The Bureaucratic Rule of Two." See Thomas E. Borcherding, "The Sources of Growth in Public Expenditures in the U.S. 1902-1970," Budgets and Bureaucrats: The Sources of Government Growth, ed. Thomas E. Borcherding, Duke University Press, Durham, NC, 1977, p.2.
<sup>16</sup> W. J. Baumol, J. C. Panzar and R. D. Willig, "Contestable Markets and the Theory of Industry Structure," Marcourt Brace Jovanovich, New York, 1982.

Recent evidence also emphasizes that a government-owned and operated network is inherently less secure than private networks.<sup>17</sup> Unlike private networks, municipally-operated networks do not generate sufficient revenue to reinvest into cybersecurity and data protection, potentially leaving consumers vulnerable to cybercrime and identity theft.

Next, we showcase a plethora of evidence that corroborates earlier examples and emphasizes that public provision of private goods, such as broadband services, are prone to lose money; push costs to other public services and to taxpayers in the form of taxes and implicit subsidies; and prevent competition by displacing and crowding out private investment.

# **GONs Financial Collapses: Additional Examples**

The failures of government provision of broadband services continue to be commonplace. The following are just a few of the documented examples of unprofitable ventures by municipalities:

- Quincy, Florida, spent \$3.3 million on a municipal network, NetQuincy, and it never obtained a positive return on its investment. In 2005, its revenues were \$415,000, and costs were \$930,000. The network eventually went out of business, leaving city residents to pick up the tab.<sup>18</sup>
- In total, Groton City, Connecticut, borrowed \$34.5 million for Thames Valley Communications. After losing money every year it operated, the company was sold for \$550,000 in February 2013. Groton Utilities assumed \$27.5 million of the debt of its subsidiary. Moody's reduced Groton City's bond rating twice.<sup>19</sup>
- Provo, Utah, sold its government-owned network, iProvo, for one dollar after spending \$39 million to build it. However, it never made a profit, and it cost the city an estimated \$1.7 million to hand over the company.<sup>20</sup>

<sup>20</sup> See Brad Grimes, "Two Municipal Wi-Fi Projects Go forward," *GCN*, October 4, 2005,

http://gcn.com/articles/2005/10/04/two-municipal-wifi-projects-go-forward.aspx; and Kevin McCaney, "Municipal Broadband's Jekyll and Hyde," at GCN, December 8, 2010,

<sup>&</sup>lt;sup>17</sup> Scott Wallsten, "Proposal for Government-Owned 5G Network Ignores History, Everything Else We Know," Technology Policy Institute, January 29, 2018,

https://techpolicyinstitute.org/publications/broadband/proposal-for-government-owned-5g-network-ignores-history-everything-else-we-know.

<sup>&</sup>lt;sup>18</sup> *Ibid*.

<sup>&</sup>lt;sup>19</sup> Joseph P. Fuhr Jr., "Don't Look to Government for Broadband Access," *Tallahassee Democrat*, December 2012.

http://gcn.com/articles/2010/12/08/municipal-broadband-success-and-failure.aspx.

- Orlando experimented with a public Wi-Fi system in 2005. The network was designed to serve a mere 200 users, but the city could not meet that shallow target. Over the 17 months the network operated, an average of 27 people used the service each day.<sup>21</sup>
- In 2005, Philadelphia's Wi-Fi system, Wireless Philadelphia, promised citywide Internet services, but that eventually was not the case, as subscriptions fell short of projections and it later served only the municipal government.<sup>22</sup>
- Wireless Hollywood in Florida failed in 2012 after borrowing \$16 million to fund the project.<sup>23</sup> It never worked and blocked other wireless Internet devices from working.<sup>24</sup>
- FiberNet was an Internet service provider built by the City of Marietta, Georgia, in 1996. In 2004, Marietta sold FiberNet for \$11.2 million, a fraction of the \$35 million spent.<sup>25</sup>
- After burning through its surplus cash, the town of Trion, Georgia cancelled its broadband project at a cost of \$1,800 per resident "with nothing to show for it."<sup>26</sup>
- In Minnesota, a taxpayer-backed cooperative among 27 cities and towns failed to obtain enough subscribers to sustain itself, which resulted in a \$1 million revenue shortfall and tax increases to pick up the slack to build and maintain it.<sup>27</sup>
- Ammon, Idaho, began building out its municipal fiber network in 2011. However, analysts have concluded that Ammon's network "will never generate a profit."<sup>28</sup>

 <sup>&</sup>lt;sup>21</sup> Tonya Alanez, "Hollywood's Failed Wi-Fi Rankles Residents," *Sun Sentinel*, July 2, 2012.
<sup>22</sup> Joseph P. Fuhr Jr., "Hidden Problems with Government-Owned Networks," Coalition for the

New Economy, January 6, 2012, http://www.coalitionfortheneweconomy.org/wpcontent/uploads/2012/01/1-6-12-Coalition-for-a-New-Economy-White-Paper.pdf.

<sup>&</sup>lt;sup>23</sup> Esme Vos, "Hollywood, FL Muni Wi-Fi Network a Flop," MuniWireless, September 7, 2011, https://muniwireless.com/2011/09/07/hollywood-fl-muni-wi-fi-network-a-flop/.

<sup>&</sup>lt;sup>24</sup> M.J. Balhoff and R.C. Rowe, "Municipal Broadband: Digging Beneath the Surface," Balhoff & Rowe, LLC, September 2005.

<sup>&</sup>lt;sup>25</sup> Timothy Lee, "Protecting Taxpayers from Public Broadband Boondoggles, Center for Individual Freedom, January 31st, https://cfif.org/v/freedom\_line\_blog/date/2012/01/.

<sup>&</sup>lt;sup>26</sup> Karl Bode, Municipal Report: Exploring Community Broadband Failures, *DSL Reports*, October 19, 2004, http://www.dslreports.com/shownews/55713.

<sup>&</sup>lt;sup>27</sup> Lee Schafer, "Minnesota's Lake County Looks for Exit on Broadband Project," Star Tribune, June 29, 2017, https://www.startribune.com/lee-schafer-county-looks-for-exit-on-broadband-project/431591253/.

<sup>&</sup>lt;sup>28</sup> Bruce Patterson, "What Is the 'Ammon Model'?" Broadband Communities Magazine, May/June 2018, https://www.bbcmag.com/community-broadband/what-is-the-ammon-model.

- In 1999, the Bristol Council in Virginia decided to build a municipal broadband network for 35,000 residents at the cost of more than \$130 million. Despite the promise of Bristol's network, it was later sold to Sunset Digital for only \$50 million in 2016.<sup>29</sup>
- In 1997, Cedar Falls Utilities added broadband to its municipal utility services. Throughout its existence, Cedar Falls' municipal network was funded through borrowing and loans totaling over \$20 million. In addition, maintenance is estimated at over \$8 million per year, despite having only 11,600 total subscribers.<sup>30</sup>
- In 2006, Wilson, North Carolina, voted to authorize \$28 million to build a municipal broadband network. In 2008, the City Council voted to borrow a further \$33.7 million, and another \$4.75 million from Wells Fargo in 2010. On top of these borrowed funds, Wilson's network costs were running approximately \$11 million per year to operate.<sup>31</sup> Wilson's network only reached its 10,000<sup>th</sup> subscriber in April 2019, almost a decade after opening.<sup>32</sup>
- In 2005, Danville, Virginia, established a municipal internet network with the hope of connecting 2,000 to 3,000 homes. A \$2.5 million loan funded the program. Despite lofty ambitions, Danville's network was reported to service only 250 homes.<sup>33</sup>
- In the late 1990s, the Lafayette Utilities System (LUS) sought to establish a fiberoptic municipal broadband network. The Parish Council agreed to proceed in 1998, and \$125 million was authorized by a public referendum. Once the approved funds had been spent, LUS borrowed an additional \$16 million. Due to low subscribership, the network continues to lose money, has ballooning debt,

<sup>&</sup>lt;sup>29</sup> *Taxpayers Protection Alliance,* "GON with the Wind: The Failed Promise of government Owned Networks Across America." May 2020, p. 8, https://www.protectingtaxpayers.org/wp-content/uploads/Broadband-Report-May-2020-1.pdf.

<sup>&</sup>lt;sup>30</sup> Charles M. Davidson and Michael J. Santorelli, "Understanding the Debate Over Government-Owned Networks: Context, Lessons Learned, and a Way Forward for Policy Makers," New York Law School, December 2016, pp. 68-72, http://docplayer.net/189308-Understanding-the-debateover-government-owned-broadband-networks.html.

<sup>&</sup>lt;sup>31</sup> Ibid, pp. 88-90.

<sup>&</sup>lt;sup>32</sup> Lisa Gonzalez, "Wilson's Greenlight Community Broadband Now Serves 10,000 Subscribers.," *Community Networks*, April 16, 2019, https://muninetworks.org/content/wilsons-greenlight-community-broadband-now-serves-10000-subscribers.

<sup>&</sup>lt;sup>33</sup> Charles M. Davidson and Michael J. Santorelli, pp. 72-74.

and has been caught overcharging its water and electrical service businesses in order to support its money losing broadband operations.<sup>34</sup>

- In 2008, Clarksville, Tennessee, launched its public broadband service, initially funded by a \$55 million bond. To complete the project, the city was forced to borrow another \$20 million. Despite the significant investments, only 30% of Clarksville's residents subscribed to the service.<sup>35</sup>
- In 2009, Concord, Massachusetts, authorized the creation of its own municipal fiber-optic network with a \$4 million bond. Despite the significant investments, the service only had 680 customers.<sup>36</sup>
- In 2007, Crosslake, Minnesota, authorized creating its municipal broadband network for \$2.4 million to be paid for in revenue bonds. However, in 2015, it was reported that the service did not meet the FCC's standard for broadband, and the service was sold off in 2016 at significant taxpayer loss.<sup>37</sup>
- In 2006, Morristown, Tennessee, authorized its municipal broadband to be financed by an \$18 million general obligation bond. However, in 2018, it was reported that Morristown's FiberNet was still \$11 million in debt and only had 5,000 customers.<sup>38</sup>
- Muscatine, Iowa, built its municipal broadband network in 2019 with a \$34 million interdepartmental Ioan. The Ioan terms were amended in 2015 to include forgiveness of \$25 million and a reduction in the interest rate from 3.5% to 0.5%. Taxpayers and users will be responsible for footing this bill.<sup>39</sup>
- Pulaski, Tennessee, is widely regarded as having one of the worst-performing municipal networks in the country. After being funded by an \$8.5 million bond, studies found that the project cost per household was \$2,425 while only generating \$797 per household in revenue.<sup>40</sup>

<sup>&</sup>lt;sup>34</sup> Lafayette Utilities System Continues to Prove Why Government Broadband Doesn't work," The Pelican Institute, September 13, 2019, https://pelicanpolicy.org/lafayette-utilities-system-fiber-continues-to-prove-why-government-broadband-doesnt-work/.

<sup>&</sup>lt;sup>35</sup> Taxpayers Protection Alliance, 2020, p. 16.

<sup>&</sup>lt;sup>36</sup> *Ibid*, p. 18.

<sup>&</sup>lt;sup>37</sup> *Ibid*, p. 19.

<sup>&</sup>lt;sup>38</sup> *Ibid*, p. 30.

<sup>&</sup>lt;sup>39</sup> *Ibid*, p. 28.

<sup>&</sup>lt;sup>40</sup> Chris Butler, "Five Tennessee Government-Owned Internet Providers Misuse Public Resources, Watchdog Group Says," *The Tennessee Star*, May 20, 2020,

https://tennesseestar.com/2020/05/14/five-tennessee-government-owned-internet-providers-misuse-public-resources-watchdog-group-says/.

- In 2010, the City of Salisbury, North Carolina, rolled out its municipal broadband, Fibrant, borrowing \$40 million. Ten years after the rollout, only 16.7% of households subscribed to the service, and studies have shown it cost \$2,224 per household to build. The service only generates \$340 per household.<sup>41</sup>
- Tacoma, Washington, is home to one of the country's oldest municipal broadband networks. Despite receiving significant public subsidies and costing \$140 million to build, the broadband network only has a penetration rate of 18.8%. In October 2019, the utility board voted to hand the network over to a private provider.<sup>42</sup>

These are just a few examples of the myriad of municipal broadband failures. As we discuss in the next section, after losing money, GONs often seek to recover these losses from taxpayers or by imposing surcharges on other city services. Taxes and implicit cross-subsidization of services pose risks on consumers and it should raise serious concerns for policymakers and regulators.

# **Implications for Taxpayers and Consumer Welfare**

Municipal broadband providers are often not on a stable financial footing. To make up for shortfalls, cities have needed to raise taxes and bonds, or increase the prices for other municipal services, like electricity, sewer, and water. For the municipality, this advantage represents a barrier to entry because private competitors cannot tap into taxpayer revenue for support. Moreover, these tax increases and subsidies demonstrate that GONs prices are higher than advertised to the public because these other sources of funds prop up failing services.

The example of Ashland Fiber Network (AFN) demonstrates this risk. AFN in Ashland, Oregon, was launched in the late 1990s and accumulated debt of \$15.5 million because of higher-than-expected construction and operation costs.<sup>43</sup> Originally, AFN borrowed its startup funds from Ashland Electric Utility.

<sup>&</sup>lt;sup>41</sup> *Ibid*, p. 34.

<sup>&</sup>lt;sup>42</sup> *Ibid*, pp. 38-9.

<sup>&</sup>lt;sup>43</sup> "A Performance Audit of the Utah Telecommunication Open Infrastructure Agency," Report to the Utah Legislature, No 2012-08, August 2012, https://1library.net/document/ydk4rveq-performance-audit-utah-telecommunication-open-infrastructure-agency.html.

After several years of city departments covering AFN shortfalls, in August 2004, the city took out \$15.5 million in bonds with an annual debt payment of \$1.43 million.

From 2005 to 2007, AFN did not contribute anything to its debt payment. In January 2005, Ashland City Council voted to give a \$1 million subsidy to AFN --\$540,000 from the wastewater fund and \$460,000 from the electric fund. In October 2005, the City of Ashland adopted a surcharge of \$7.50 on all electric bills to subsidize AFN, which was rescinded after citizen protests. In December 2005, \$500,000 was given from the electric department to help AFN pay off its debt. In addition, property taxes now cover part of AFN's debt. If the private sector behaved in this way, it would be considered consumer fraud or crony capitalism, but in the case of municipal broadband service providers, it is just business as usual.

If the private sector behaved in this way, it would be considered consumer fraud or crony capitalism, but in the case of municipal broadband service providers, it is just business as usual.

Other examples emphasize a common trend. In 2002, the 11 cities joined the Utah Telecommunications Open Infrastructure Agency (UTOPIA) by undertaking a \$135 million bond.<sup>44</sup> In August 2012, an audit report to the Utah Legislature revealed UTOPIA has never had a profitable year.<sup>45</sup> UTOPIA lost \$18.8 million between 2010 and 2014, had a negative net value of \$120 million, and owed interest totaling \$500 million until 2040. To make matters worse, in the fiscal year 2013, residents of the 11 UTOPIA cities were scheduled to pay nearly \$13 million for debt services.

For Burlington Telecom, the primary issue is the system's debt load. A state audit found the GON had violated its state license for the five years it had been operational and had no feasible way to repay its debts.<sup>46</sup> The system's debt totaled \$51 million. Another issue with Burlington is that \$17 million of its \$51 million debt was reported to be illegally borrowed from taxpayers. Burlington's massive burden and poor financial performance resulted in the City's bond rating being lowered three times in just two years and was only one step above junk bond status. In its response to Moody's downgrade, the City acknowledged:

 <sup>&</sup>lt;sup>44</sup> D. Gram, "Vt. Telecommunications Firm Not Viable, Audit Concludes," Associated Press, Dec. 11, 2010.

<sup>&</sup>lt;sup>45</sup> "City of Burlington's Responds to Moody's Investors Service Downgrade," Press Release, June 12, 2012.

<sup>&</sup>lt;sup>46</sup> D. Boraks, "MI-Connection Revenues Weak on TV Customer Losses," *Davidson News*, July 29, 2011.

"The most troubling finding of the FY11 audit was that the city has very limited liquidity. The Burlington Telecom situation is by far the largest driver of this situation..."<sup>47</sup>

In 2007, the cities of Mooresville and Davidson took over the former Adelphia Communications cable company, preempting a private offer from Time Warner Communications. Local officials believed that it was nearly a risk-free investment, and Davidson's Town Manager Leamon Brice declared, "The potential growth of customers, and therefore profit is astronomical." However, by 2010, the municipal broadband system, MI-Connection, had still not turned a profit. Revenues increased by just 3 percent in the fiscal year ending June 30, 2010, when they were projected to increase by 20 percent, and losses were \$ 5.7 million down from \$6.8 million the previous year.<sup>48</sup> Also, for the second year in a row, MI-Connection had received a warning letter from state officials concerning its financial conditions and outlook.<sup>49</sup> As a result, the two towns must either repay the system's debt with general funds or default. Davidson's Town Manager stated the consequences of default:

"That would have severe repercussions. First, the two towns wouldn't be able to borrow again, and second a default would affect bond ratings and interest rates for not only our towns, but for towns across North Carolina and the nation."<sup>50</sup>

The example of the Electric Power Board (EPB) in Chattanooga is also worth noting. Specifically, EPB's 2010 Annual Report sheds some light on the financial record of EPB Fiber Optics. In 2010, its net assets at the end of the fiscal year were \$16.8 million in the red, a negative increase of \$3.8 million from 2009. In addition, it recently had \$57 million in notes payable to the electric system and current assets of only \$52.9 million. In Tennessee in 2010, nine municipal telecommunications providers were operating, all of which were affiliated with a municipal electric company. According to Rizzuto, "Municipal electric utilities in Tennessee have incurred deficits of approximately \$176 million for these communications ventures."<sup>51</sup>

<sup>&</sup>lt;sup>47</sup> D. Boraks, "State Officials Repeat Concerns about MI-Connection Finances," *Davidson News*, Feb.24, 2011.

<sup>&</sup>lt;sup>48</sup> J. A. Taylor, "Davidson, Mooresville Taxpayers Face Bailout of Municipal Broadband Service," *Carolina Journal News*, May 14, 2010.

<sup>&</sup>lt;sup>49</sup> R. J. Rizzuto, "Financial Performance of Tennessee's Municipal Cable and Internet Overbuilds," March 21, 2011.

<sup>&</sup>lt;sup>50</sup> Ed McMahan, "Our Experiment with Municipal Broadband Has Failed," *Carolina Journal*, March 24, 2011, http://www.carolinajournal.com/opinions/display\_story.html?id=7562.

<sup>&</sup>lt;sup>51</sup> R. J. Rizzuto, Financial Performance of Tennessee's Municipal Cable and Internet Overbuilds, University of Denver, March 21, 2011.

Municipalities are currently flush with cash from unspent government stimulus.<sup>52</sup> As such, unspent money should be prioritized towards other benefitting projects like transportation, water/sewers lines, and health services instead of assuming that broadband has a higher return on investment and crowding out private investment.

Numerous examples of inefficient operations by municipal broadband providers showcase a trend where GONs push their losses onto the consumers of other municipal services and to taxpayers. This fiscal malpractice harms consumers, and it should be an issue that state governments need to address. Among the 22 states that have placed limitations on government-owned broadband services, some, like in North Carolina, do not prevent new municipal broadband service providers from entering the market. Instead, some of these laws merely require local voters to approve that entry.

#### Conclusion

The long history of examples of GONs failures teaches us that government ownership of broadband networks is a bad policy for serving consumers, encouraging competition, and fostering innovation. The plethora of empirical evidence shows why and how government-run broadband networks fail to deliver access to reliable, high-quality, affordable broadband.<sup>53</sup>

The overwhelming conclusion points to the increased inefficiency of these networks due to the high fixed cost investments and the long-term debt obligations for the residents, leading to low adoption rates and perpetual cross-subsidization of internet services.

<sup>&</sup>lt;sup>52</sup>" Fact Check: Is There Over \$1 Trillion in Unspent COVID-19 Relief Funds?" *AllSides Headline Roundup*, July 27, 2021, https://www.allsides.com/story/fact-check-1-trillion-covid-19-relief-funds-unspent.

<sup>&</sup>lt;sup>53</sup> See George Ford, "OTI's Cost of Connectivity 2020 Report: A Critical Review," Phoenix Center Perspectives, no. 20-06, July 20, 2020, https://phoenix-center.org/perspectives/Perspective20-06Final.pdf; Doug Brake and Alexandra Bruer, "Broadband Myths: Does Municipal Broadband Scale Well to Fit U.S. Broadband Needs?" Information technology and Innovation Foundation, June 24, 2021, https://itif.org/publications/2021/06/24/broadband-myths-does-municipalbroadband-scale-well-fit-us-broadband-needs; Will Rinehart, "Are Government-Owned Broadband Networks Effective?" The Center for Growth and Opportunity at Utah State University, October 2020, https://www.thecgo.org/wp-content/uploads/2020/10/Are-Government-Owned-Broadband-Networks-Effective.pdf; Sarah Oh, "What Are the Economic Effects of Municipal Broadband?" 2019, https://papers.srn.com/sol3/papers.cfm?abstract\_id=3426247; and C.S. Yoo, J. Lambert, J. and T.P. Pfenninger, "Municipal Fiber in the United States: A Financial Assessment," University of Pennsylvania, Institute for Law & Economics," Research Paper no. 21-20, 2021, https://papers.srn.com/sol3/papers.cfm?abstract\_id=3892494.

Municipal broadband networks crowd out private investment. As our review of municipal ventures shows, once a municipal-owned network provider enters a market, they can lose money and still survive by pushing financial losses to other municipal services and taxpayers. In addition, the desire of GONs to expand into adjacent markets should give private broadband providers pause about entering these markets. For these reasons, municipal-own networks are anticompetitive.

In terms of affordability, because municipal broadband providers lose money and shift costs, the effective price paid by consumers is much higher than advertised. With broadband services being very price sensitive (price elastic), when consumers experience price increases, it results in a decrease in demand. This means that GONs do not provide lower prices and they do not encourage increased broadband adoption.

The combination of higher prices and demand repression means that municipally-run broadband networks produce lower consumer welfare than their private counterparts. For these reasons, municipal-owned networks are anti-consumer.

Creating government-run enterprises is precisely what regulators and policymakers should avoid if improving consumer welfare is the goal. Instead, public policies need to encourage private investments and competition if broadband is to be fully deployed and consumers are to benefit.