



Going, Going, GONs!

Broadband Access and Adoption in
Tennessee and the Financial Performance
of Government-Owned Networks



Key Takeaways

- ▶ Internet access is nearly universal in Tennessee. **Over 95 percent of Tennesseans have access to broadband**, and 93 percent can access highspeed broadband through wired or fixed wireless technologies.
- ▶ Not all Tennesseans are online of course, but the reasons why they aren't center around adoption of service. Of those not online, **64 percent say they don't need to be, and another 15 percent opt out of internet service because it's too expensive**. Less than one percent of Tennesseans say they aren't online because of lack of access.
- ▶ Government-Owned Networks (GONs) in Tennessee have been historically slow to attract subscribers. Data show GONs **overestimated the number of customers they would acquire for roughly their first four years**.
- ▶ Tennessee GONs have **underestimated their expenses by nearly \$367.9 million**, constituting a 98 percent cost overrun, despite collecting \$284.6 million more in revenue than they projected. This highlights their inability to adequately estimate the costs of operating broadband networks and underscores the financial risks in building and operating broadband networks.
- ▶ In light of some GONs' underperformance, Tennessee law should be amended to strengthen existing statutory review of GON business proposals to **more accurately assess their feasibility**.

Introduction

The Need for Speed

Access to high-speed internet has become almost a necessity of modern life, like electricity and water. This has become especially true since the COVID-19 pandemic. Post-pandemic, the number of Americans using the internet continues to reach all-time highs.¹ The pandemic also changed the way we work, with one estimate finding that 13 percent of all U.S. private-sector workers work remotely, requiring reliable access to the internet for their livelihood.² This number has remained relatively unchanged since the pandemic with an additional 23 percent of workers in a hybrid situation, working remotely part-time.³ But beyond the pandemic and work, everything from paying bills, shopping, communicating with teachers, and obtaining directions to face-timing friends and families occurs online. The integral aspect of the internet in our daily lives and modern economy has led some to call for treating the internet like electricity, as a public utility, where all should be guaranteed access by the government.⁴

In order to bridge this “digital divide” some policymakers, have sought to increase access through a certain type of internet service provider: Government-Owned Networks or GONs. For example, part of the Biden Administration’s Infrastructure Investment and Jobs Act included over \$65 billion for expanding broadband, and involved efforts to reduce barriers and restrictions on GONs.⁵ The economic impact of GONs has been hotly debated in academic and policy circles.⁶ But this effort, especially when billions of taxpayer dollars are concerned, raises several fundamental questions: What is the state of broadband accessibility in Tennessee? Have Tennessee GONs been successful at meeting their own projections around their ability to deliver broadband? And have consumers widely utilized GONs, highlighting their viability in the marketplace?

Access to Broadband in Tennessee

With such concern over the accessibility, or rather the inaccessibility of broadband, it's important to know where lack of access truly exists to properly identify the extent of the “digital divide” in 2024. For decades, private industry has sought to bridge this gap, investing trillions of dollars in infrastructure to allow more Americans to access the internet and at ever increasing speeds, investing \$2.1 trillion dollars since 1996.⁷ It's primarily due to this massive investment of the private sector that not only has access increased, but average internet speeds have increased, from an average of 5 Mbps in 2009 to nearly 250 Mbps today.⁸ In light of this massive level of private-sector investment, how many Tennesseans are still without access to broadband and the digital economy?

Fortunately, the Federal Communications Commission (FCC) collects data from internet providers to document which areas, down to the census block, have internet

access and those that don't. One important caveat is that if a provider offers its internet service to a census block, the FCC considers all of that area to have access. In other words, if one household has access, the FCC considers the entire block to have access. There are three commonly considered download/upload speeds for policymakers. The first is 10 Mbps download and 1 Mbps upload (10/1), which makes most essential internet services possible. The second is 25 Mbps download and 3 Mbps upload (25/3), which this speed has defined broadband internet since 2015. However, as of March 2024, the FCC updated its definition of broadband to 100 Mbps download and 20 Mbps upload (100/20).⁹ For the remainder of this report, we will refer to these three speeds as low speed, standard speed, and high speed broadband, respectively. Tennessee's internet coverage is greater than the national average at all three speeds.

	Low Speed Coverage	Standard Speed Coverage	High Speed Coverage
USA	95.78%	94.42%	92.00%
Tennessee	96.42%	95.04%	93.54%

Table 1. Tennessee Coverage vs. National Coverage by Percentage

When compared to other states, Tennessee's percent coverage ranks 23rd, 24th, and 16th at the three respective speeds. However, these numbers lack the context of the density of the 50 states. The economics of investing in the necessary infrastructure in remote areas arguably serves as the largest barrier to expanding coverage, so naturally, the less dense an area (in this case, a state), the more costly it will be to invest in this infrastructure to expand internet access. For example, when rural Coffee County received a grant to expand internet access, the cost averaged around \$5,000 per

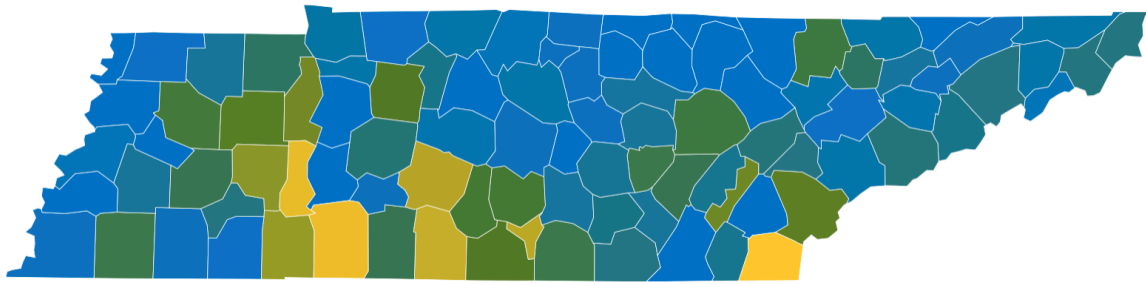
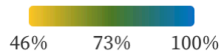
household.¹⁰ Meanwhile, in a larger, denser city, the cost can drop to as low as \$800.¹¹ One estimate from the FCC estimated the most remote households would cost nearly \$90,000 each to connect to wired broadband.¹² As the 20th most dense state, Tennessee's coverage is only three spots and four spots below its density rank for low speed and standard speed coverage, respectively. Meanwhile, when compared to its density, Tennessee actually has higher levels of high speed coverage than its density would suggest.

But how does coverage vary within the state? It is similar to the national level, where more rural communities have lower levels of access. However, the coverage is not as dire as some might expect, as only 11 of Tennessee's 95 counties have less than 75 percent

coverage for standard speed broadband. Meanwhile, high speed broadband is available to less than 75 percent of the population in only 14 counties. For a full county-by-county breakdown, see Figure 1 below:

High Speed Broadband Access in Tennessee by County

Over 93.5% of Tennesseans Have Access to High Speed Broadband



Standard Speed Broadband Access in Tennessee by County

Over 95% of Tennesseans Have Access to Standard Speed Broadband

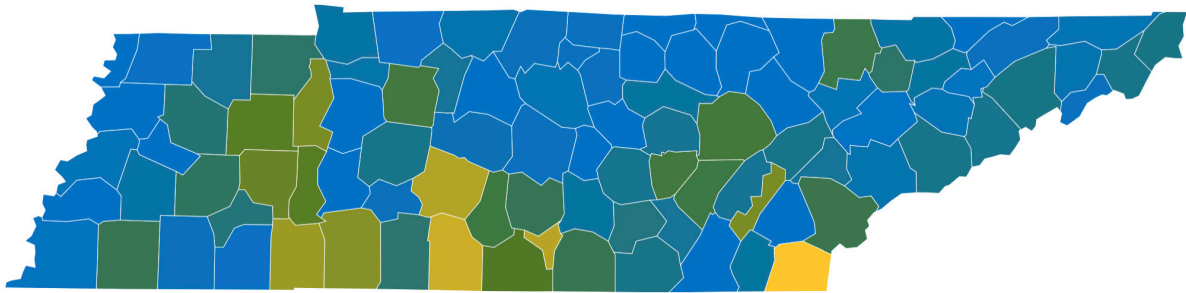
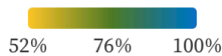


Figure 1. Despite the FCC updating its definition of broadband earlier this year, Tennesseans in most counties have access to high speed coverage (only three counties have less than 50 percent coverage). Source: FCC National Broadband Map, updated August 6, 2024 (includes wired and licensed fixed-wireless coverage)

Pulling the Plug

Why Tennesseans Aren't Online

But coverage is only half of the equation. Despite concerns of some politicians over the lack of universal access, many people who have access to broadband choose not to utilize it, regardless of the calls of some to treat broadband as if it's a necessary utility like water and electricity. Why aren't some Tennesseans online? Fortunately, we know the answer. Since the mid 1990s, the National Telecommunications and Information Administration (NTIA) has collected survey data from

all 50 states regarding their residents' internet habits, access, and reasons for remaining offline. In their most recent survey in November 2023, 64 percent of Tennesseans who didn't have internet access at their home stated they did not need it. The second most common explanation was that broadband was too expensive. Barely over one-half of one percent of Tennesseans who aren't online cited unavailability where they lived as their reason for staying offline.

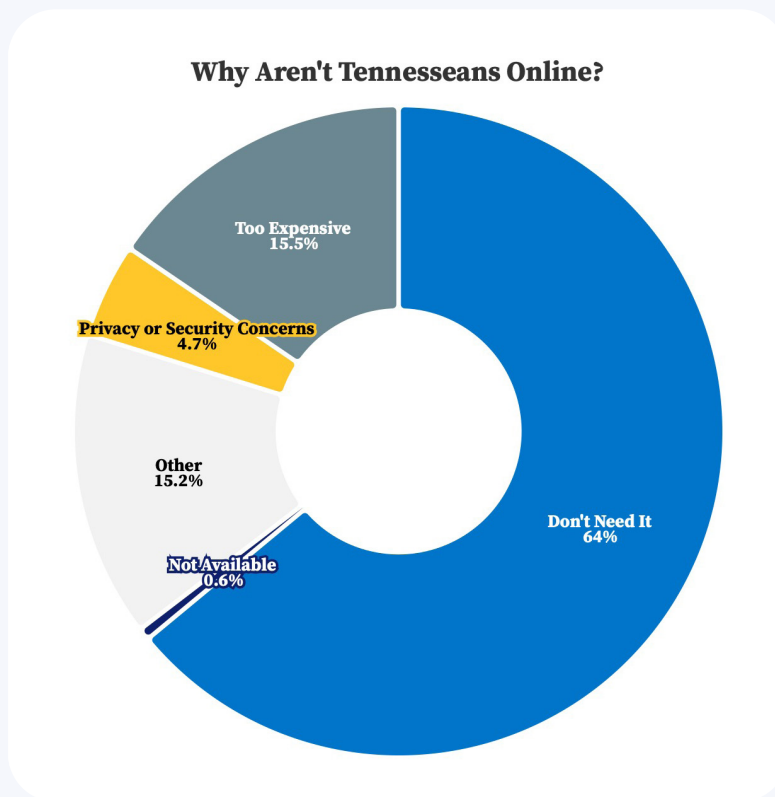


Figure 2. According to federal surveys, Tennesseans rarely cite a lack of access as the reason they do not have broadband at home. Source: NTIA Internet Use Survey Data

Nationally, those who tend to say broadband is too expensive are younger, lower income, or minorities (i.e., 18 percent of those earning under \$25,000 annually, 20 percent of Hispanics, 23 percent of African Americans, and 25 percent of 15-24 year olds). Meanwhile, those

who say they do not need internet access tend to be older (i.e., with every two out of three of Americans over the age of 65 responding they do not need it compared to just 37 percent of Americans aged 25-44).

Financial Success of Government Owned Networks

Despite the private sector’s ability to service the majority of Tennesseans’ internet needs and with few Tennesseans offline due to a lack of access, an increasing number of government utilities have looked to launch their own broadband networks. Take, for example, Lenoir City, which sought to launch a network in 2021, despite 99 percent of the city already having access to three internet providers.¹³ But are GONs effective at delivering quality broadband at affordable prices? In order to answer this, we must look at how they have historically performed.

A unique aspect of Tennessee law is that before launching a GON, all utilities must provide a business plan and financial projections to the state Comptroller for review.¹⁴ Through open records requests with both the state Comptroller and individual municipal utilities, we were able to obtain these various business plans. While many studies seek to assess the economic impact of GONs, these cannot easily calculate the opportunity cost of crowding out increased investment from the private sector.¹⁵

Not all GONs could be analyzed, however. GONs that are in the process of building out and are not providing service did not have fiber optic performance data in their Comprehensive Annual Financial Reports, so areas such as Greeneville, Lenoir City, Lexington, Cleveland, and Dickson were not considered. Some GONs that are providing service no longer have records or copies of their original business plans. Since they were submitted so long ago, the plans were no longer subject to record retention laws, such as in Columbia, Jackson, and Pulaski. This is an unfortunate oddity in law: that many GONs’ business plans included 20-year projections, but they were not required to keep them for 20 years to analyze their performance.

The cases of Athens and Chattanooga deserve special attention. The Athens Utility Board submitted their business plan back in 2002. While the plan was determined feasible by the Comptroller’s office, Athens chose not to move forward with construction of their broadband network for over a decade, with their first full year of operation in fiscal year 2018.¹⁶ Due to inherent differences from inflation and the lapse of time, Athens was excluded from analysis. Chattanooga’s Electric Power Board was also excluded, as their current GON is extremely different from their initial proposal back in 2002, which focused solely on providing high-speed internet to commercial customers but now provides

GONs analyzed

Bristol
Clarksville
Erwin
Johnson City (“Brightridge”)
Knoxville
Milan
Newport
Tullahoma
Union City

.....

GONs providing service that were not included

Athens
Chattanooga
Columbia
Fayetteville
Jackson
Pulaski

service to thousands of residential customers.¹⁷ While its fiber optic network is nationally recognized, because its current business model is different from the original plan that was submitted and reviewed, it could not be fairly compared.¹⁸

Even though different GONs were launched at different times, because projections in GON business plans are broken down by year of operation, we can aggregate the performance of all GONs to their projections based on that operational year. For example, projected expenses for every GON’s first year of operation can be totaled and compared to their total first year actual expenses, and so on, for every subsequent year of operation.

Every business plan observed projected their expected customer base for at least some period of time. While a few such as Tullahoma only included three years of customer projections, most projected their number of customers out decades, typically 20 years. For those that did not provide projections for every year, their actual vs. projected customer base was included for years in which a projection was available.

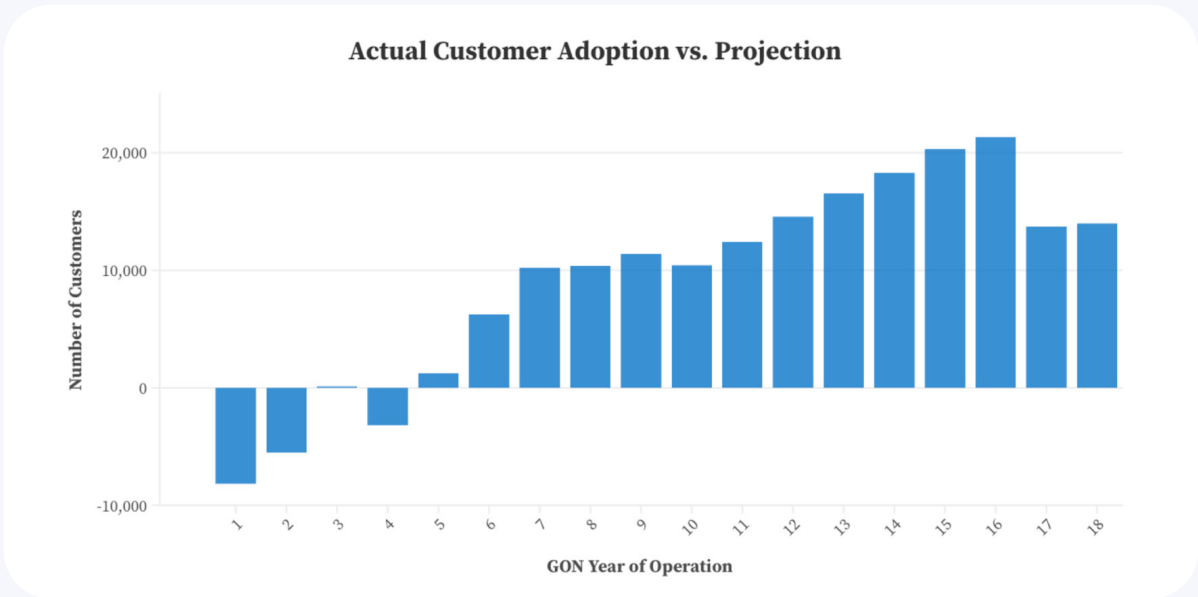


Figure 3. After five years of operation, GONs cumulatively and permanently have more customers than they initially projected.

When analyzing the cumulative performance of GONs in attracting customers, a consistent trend emerges. GONs overestimate their initial customer acquisition rate, attracting over 8,000 fewer customers than expected in their first year of operation. And this figure is not the result of one or two outliers, as eight of the 10 analyzed GONs overestimated their customers for year one. However, by year five this number flips, and for every year afterwards GONs have consistently acquired more customers than expected.

This trend of initial under-projections followed by exceeding expectations in the number of GON customers impacts their revenue performance. Unlike with the number of customers, every GON provided specific revenue forecasts for at least their first 10 years of operation, providing a better snapshot of expectations versus reality.

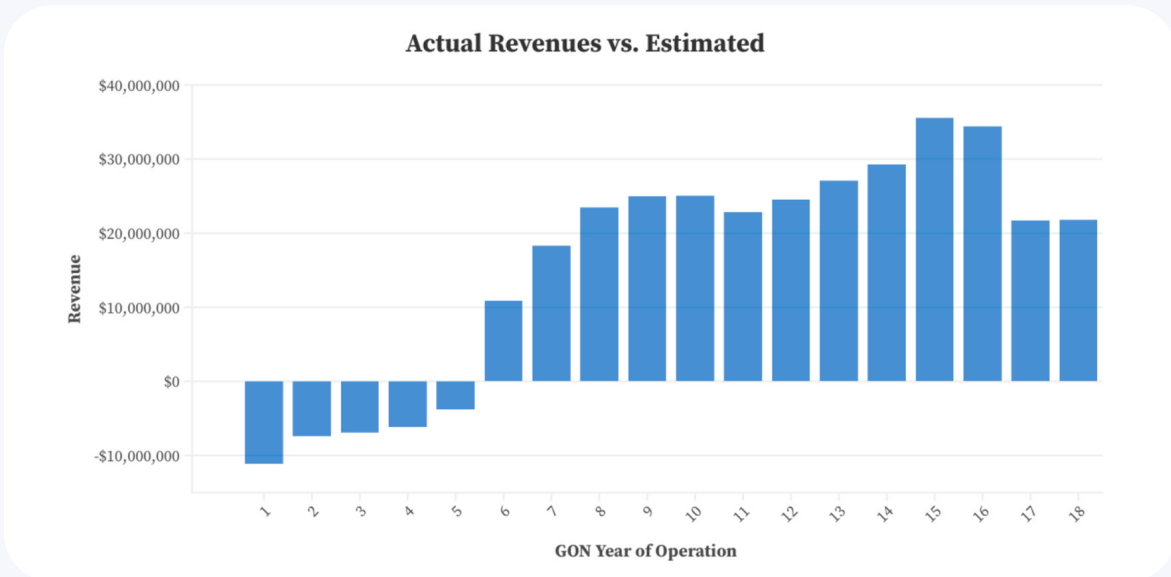


Figure 4. Tennessee GONs have collected revenues of \$284.6 million more than their projections.

As one can see, customer projections have a strong correlation with GON revenue collections versus their estimates, with GONs not meeting revenue forecasts in years one through five but surpassing their projections in year six onwards. In all, Tennessee GONs have collected 57 percent more revenue than their initial projections.

However, this does not mean that GONs are efficient at delivering broadband, as there are two sides to the ledger: revenues and expenses. While GONs in Tennessee have significantly underestimated their revenues, their estimates for expenses are even farther off, and in the opposite direction.

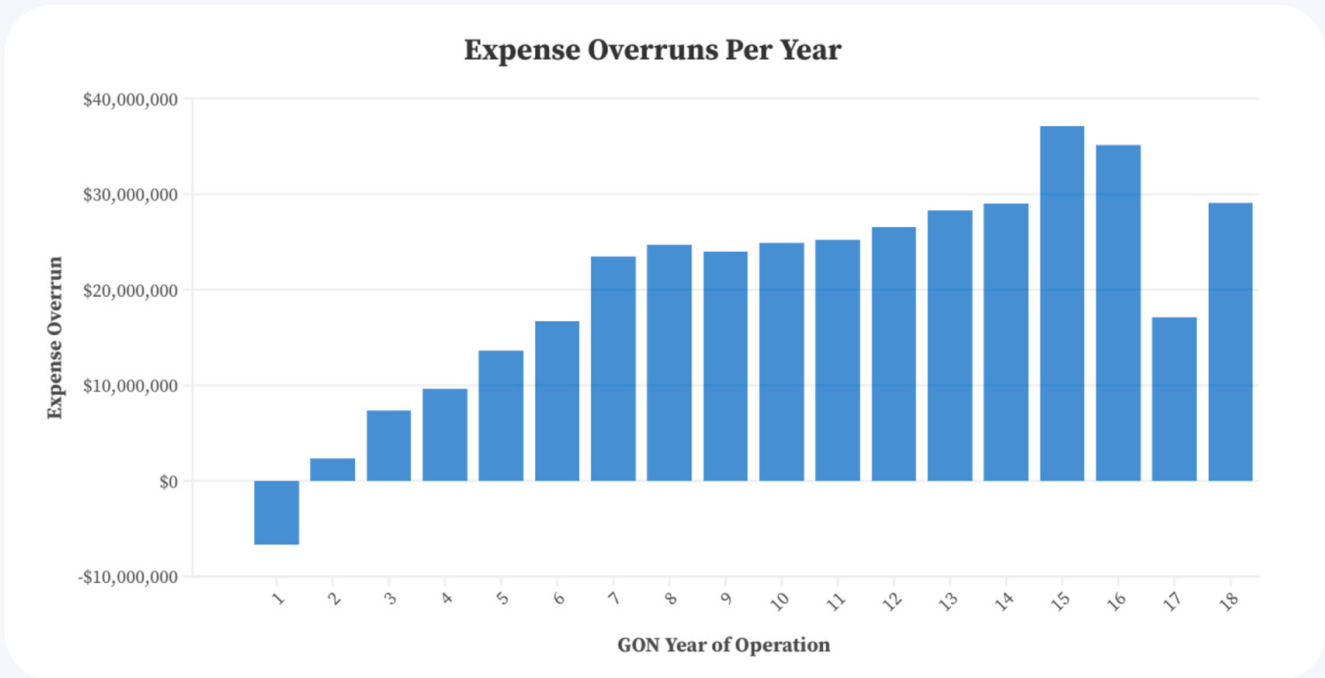


Figure 5. Tennessee GONs have woefully underestimated their expenses every year past their first year of operation.

In every year of operation to date, GONs expected \$375.6 million in costs. However, their costs have reached nearly \$785 million, underestimating the costs to operate a broadband network by \$367.9 million, a 98 percent overrun. This means the cost of operating a broadband network is almost double what Tennessee GONs have estimated. Arguably, this type of poor calculation stems from the fact that utilities are typically in the electric business, not the internet business, and thus lack the expertise to truly account for the costs of operating a broadband network, from initial necessary investments to network upgrades.

This massive miscalculation by GONs has negatively impacted their cash flows. While every GON forecasted negative revenues in the first few years, obviously all would expect to be cash flow positive at some point. While most expected to be cash flow positive in three to five years, Tennessee GONs have not been collectively cash flow positive until year eight of operation. In all, the analyzed GONs have missed profitability targets by 32.8 percent, or \$12.1 million. Missing profitability targets has made it much more difficult for GONs to get “in the black.” When reviewing their Unrestricted Net Positions, we see negative values in the tens of millions of dollars over the course of a decade.

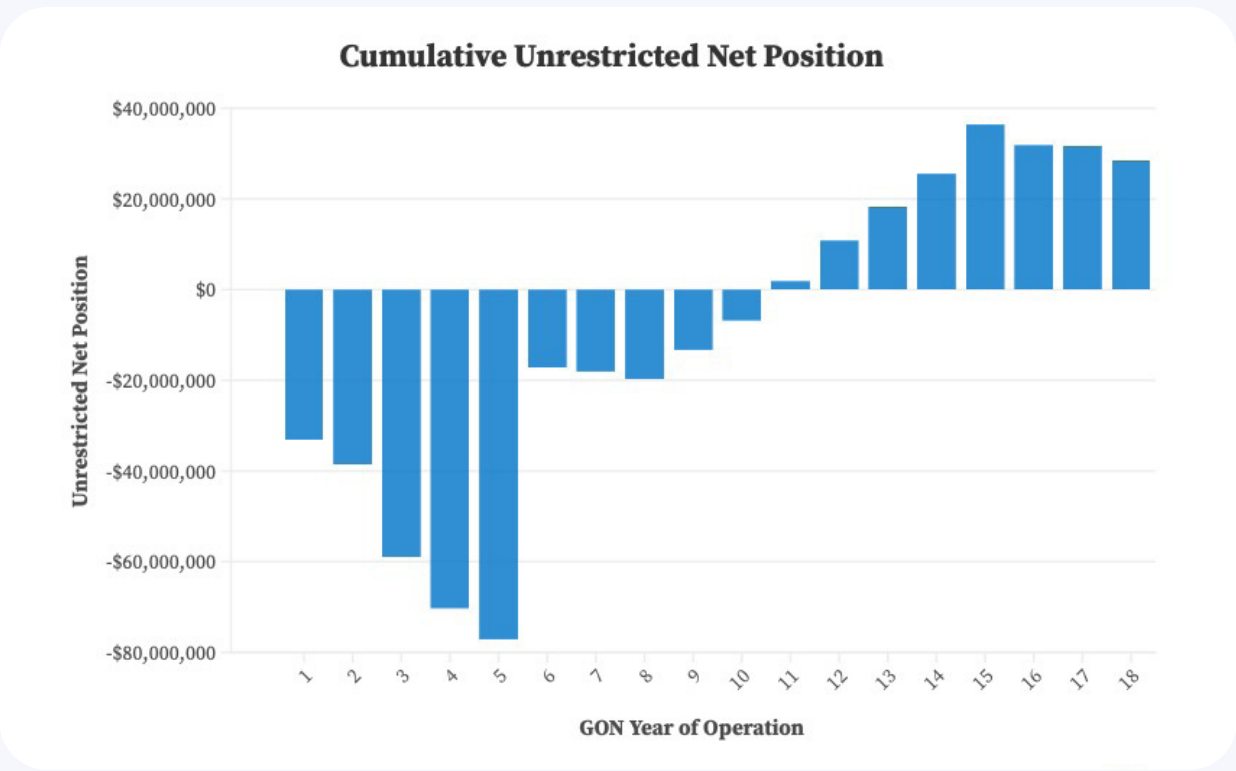
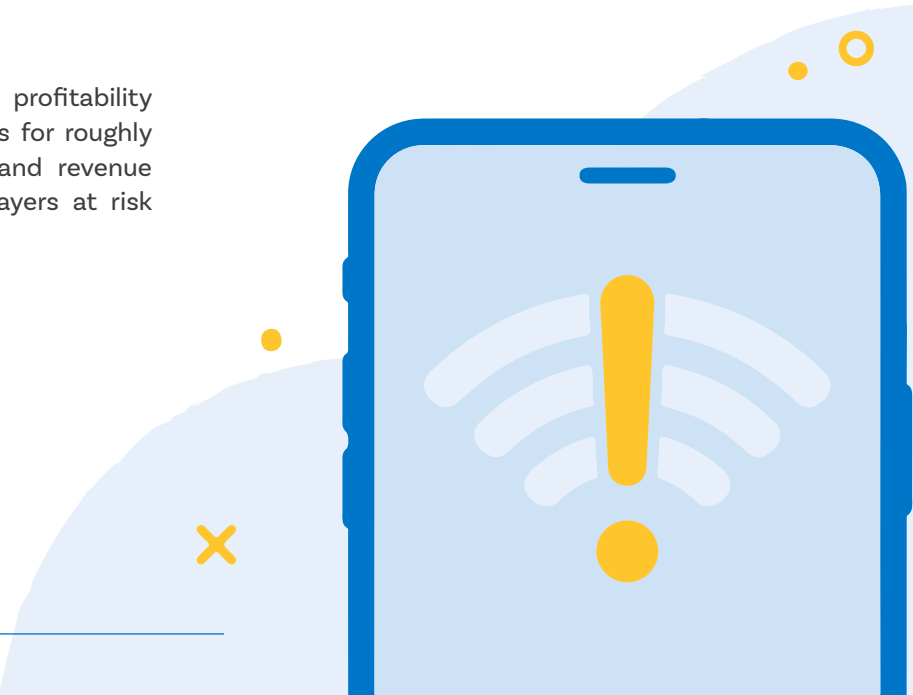


Figure 6. Only GONs operating for more than a decade have a remotely healthy financial status.

Unrestricted Net Position is the best picture of a public entity’s financial health, as it represents liquid assets. Because many assets are limited or restricted to a specific purpose, this figure shows if a GON can truly pay off all of its debts. For example, if a family owns their house but does not have the money to pay their electric bill, they wouldn’t sell their house to do so. Meanwhile, cash in their savings accounts is “unrestricted” to pay off that debt.

In totality, Tennessee GONs have missed profitability targets and carried massive financial risks for roughly a decade, despite exceeding customer and revenue targets. This lack of accuracy puts taxpayers at risk

to shoulder the loss of these investments, which can cost tens of millions of dollars. For example, Memphis Networx, the GON launched by Memphis Light, Gas, and Water in 2001, was sold to a private company at a \$32 million loss after realizing their efforts at providing internet constituted a financial mistake.¹⁹



Recommendations for Reform

What reforms can Tennessee policymakers put into place to ensure GON proposals are more thoroughly vetted and more likely to succeed? Additionally, are there reforms that would make it easier and less costly for internet providers to invest in their networks and expand coverage to those remaining unserved areas?



First, utilities whose business plans' feasibility cannot be determined when reviewed should not be able to move forward. There are currently two GONs where the Comptroller could not determine their feasibility but decided to move forward regardless: Johnson City “Brightridge” and Newport Utilities. One other GON is currently building out service (Greeneville Light & Power System). Brightridge and Newport were two of the worst performing GONs observed. Brightridge’s first five years of operation have fallen 16 percent short in terms of customer projections and over \$17 million short of revenue projections. Despite projected earnings over \$5.3 million, it has lost \$22.9 million. Meanwhile, Newport’s GON has fared so poorly it has come under fire from the state Comptroller’s office and has possibly violated state law.²⁰



Alternatively, the state could require utility companies to resubmit a new plan, incorporating feedback from the initial analysis if the Comptroller’s office cannot determine the feasibility of an initial plan. As a final protective measure, plans whose feasibility cannot be certified should be required to obtain a supermajority vote through a referendum. Under current law, the governing body of the utility must pass a two-thirds vote to approve the GON, or the GON can similarly win approval by majority vote in a public referendum. If a GON seeks approval of a business plan with poor financial projections, a referendum obtaining a two-thirds vote should be required since taxpayers are at an increased risk for financial loss in such an endeavor.




Another reform would consist of putting a time clock on the validity of the Comptroller’s analysis. As previously stated, the Comptroller noted that Athens’ broadband business plan was feasible over 20 years ago in 2002. However, the Athens Utility Board waited over a decade to build out their network, with their first full year of operation in fiscal year 2018. Tennessee utilities should be required to resubmit a business plan if they do not move forward with their broadband aspirations after five years. With rapidly evolving technology and costs of materials, the reliability and relevance of a 15-year-old business plan is minimal at best. The time window could be based upon whether the utility has started construction or taken out the bonds needed for initial start-up costs.



Next, utilities should be required to submit an updated plan if their business model and plans change substantially from those originally reviewed by the Comptroller. As previously stated, Chattanooga’s broadband network is completely different from its original plan of servicing only commercial customers. While the utility’s gig network has received plenty of acclaim, that may not be the case in future instances; future utilities should be required to submit an updated plan for review.



Finally, GONs should be required to submit reports to the Comptroller’s office on their performance compared to initial projections at regular intervals, every five years for the first 10 to 20 years, for instance. If the GON misses projections by a large margin, it should include an action plan to get back on track and meet projections. GONs represent investments of tens if not hundreds of millions of dollars by entities ultimately backed by taxpayers, and these investments cannot be adequately assessed by policymakers without consistent review and analysis. Beacon is unaware of any other comprehensive analysis of Tennessee GON financial performance compared to their projections. Contrast this to state entities that are subject to the Tennessee Government Entity Review Law, where financials and audits are reviewed for performance by the legislature’s Government Operations Committee every few years.²¹



Besides the procedural reforms listed above, policymakers should consider reforms that would make it easier for providers to expand internet services to those remaining underserved areas, such as a statewide “Dig Once” policy. Dig Once allows internet service providers to lay fiber cables during unrelated road construction. According to one estimate from the federal Department of Transportation, the average cost of laying fiber is \$27,000 per mile. One study by the Government Accountability Office found that Dig Once policies lower that cost by 25 to 33 percent in urban areas and 15 percent in rural areas.²² Yet only 16 states have implemented this policy. Tennessee policymakers should add our state to that list.²³

Additionally, lawmakers should consider eliminating the sales tax on broadband equipment. A 2017 study by the Tennessee Advisory Commission on Intergovernmental Relations (TACIR) projected doing

so would cost the state \$45.5 million.²⁴ However, concerns existed that this would not focus investment in areas still underserved. The sales tax refund could be structured for its eligibility only in counties or areas that have less access, say a certain percent below the statewide average coverage of high speed broadband. The state already provides sales tax refunds to certain industries (e.g., the entertainment industry) where approved goods for a qualified production can receive such a refund.²⁵ This approach is preferable to a credit against a company’s franchise and excise taxes in that consumption taxes are best assessed at the consumer level, like a traditional sales tax. The current sales tax on broadband infrastructure is a sales tax on business inputs, which raises costs at every stage of production. Functionally, this operates similarly to a gross receipts tax, which creates a “pyramid” or exponential effect on the costs of delivering a good or service.²⁶

Conclusion

Tennessee GONs have exceeded their initial customer projections, albeit after operating several years with less success out the gate than they expect. This larger than expected market share has led to \$284.6 million more in revenue than initially anticipated. However, that does not mean all is well. Tennessee GONs have woefully underestimated the costs and ongoing expenses of operating networks to the tune of \$367.9 million, representing cost overruns of 98 percent. This miscalculation has caused GONs to miss their total estimated cash flow to date by over \$12 million, nearly 33 percent, and should give policymakers pause around electric utilities’ ability to adequately forecast the risks of starting a broadband network.

State policymakers should consider reforming existing procedural guardrails, which have not been amended since 2010, to better protect taxpayers when the Comptroller’s office cannot determine the feasibility

of a utility’s broadband proposal or when a utility’s business plan is substantially changed or delayed (e.g., as in Chattanooga or Athens’ utilities). Additionally, GONs should be required to periodically analyze their performance against projections and provide a plan if falling behind. Finally, state lawmakers should consider ways to facilitate the free-market expansion of broadband access. As seen in numerous other states, this could include lowering implementation costs through a ‘Dig Once’ policy, and exempting business inputs—mainly broadband infrastructure—from the state sales tax. If all of these reforms are implemented, not only will Tennessee taxpayers be better protected from poorly performing networks, they will have even better access to faster and more affordable broadband, allowing them to take advantage of the ever-increasing digital world in which we find ourselves.

References

1. “Internet, Broadband Fact Sheet.” Pew Research Center. Corrected February 1, 2024.
[https://www.pewresearch.org/internet/fact-sheet/internet-broadband/.](https://www.pewresearch.org/internet/fact-sheet/internet-broadband/)
2. “Telework during the COVID-19 pandemic: estimates using the 2021 Business Response Survey.” U.S. Bureau of Labor Statistics. March 2022.
[https://www.bls.gov/opub/mlr/2022/article/telework-during-the-covid-19-pandemic.htm.](https://www.bls.gov/opub/mlr/2022/article/telework-during-the-covid-19-pandemic.htm)
3. Katherine Haan, “Remote Work Statistics and Trends in 2024.” Forbes. Updated June 12, 2023.
[https://www.forbes.com/advisor/business/remote-work-statistics/#sources_section.](https://www.forbes.com/advisor/business/remote-work-statistics/#sources_section)
4. Brett Milano, “Should the internet be treated like a public utility?” Harvard Law Today. April 20, 2021.
[https://hls.harvard.edu/today/should-the-internet-be-treated-like-a-public-utility/;](https://hls.harvard.edu/today/should-the-internet-be-treated-like-a-public-utility/)
Adi Robertson, “Why we need a public internet and how to get one.” The Verge. May 23, 2022.
[https://www.theverge.com/2022/5/23/23125917/ben-tarnoff-public-internet-interview.](https://www.theverge.com/2022/5/23/23125917/ben-tarnoff-public-internet-interview)
5. Jon Reid, “Municipal Broadband War Reignited in Biden’s Infrastructure Push.” Bloomberg Law. April 1, 2021.
[https://news.bloomberglaw.com/tech-and-telecom-law/municipal-broadband-war-reignited-in-bidens-infrastructure-push;](https://news.bloomberglaw.com/tech-and-telecom-law/municipal-broadband-war-reignited-in-bidens-infrastructure-push)
Sean Hollister, “The government is helping Big Telecom squeeze out city-run broadband.” The Verge. June 20, 2023.
[https://www.theverge.com/23763482/municipal-broadband-biden-internet-funds-telecom-lobbying.](https://www.theverge.com/23763482/municipal-broadband-biden-internet-funds-telecom-lobbying)
6. See, for example, Christopher S. Yoo, “Municipal Fiber in the United States: An Empirical Assessment,” University of Pennsylvania Carey Law School. SSRN.com. Revised August 18, 2017.
[https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2944137;](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2944137)
Christopher Mitchell, “Correcting Community Fiber Fallacies,” Institute for Local Self-Reliance. June 2017.
[https://communitynets.org/sites/www.muninetworks.org/files/fiber-fallacy-upenn-yoo.pdf;](https://communitynets.org/sites/www.muninetworks.org/files/fiber-fallacy-upenn-yoo.pdf)
- and Christopher S. Yoo and Timothy Pfenninger, “Point, Counterpoint—Responding to Critics Regarding Our Recent Study on the Financial Viability of Municipal Fiber Networks.” University of Pennsylvania Carey Law School. June 7, 2017.
[https://www.law.upenn.edu/live/news/7146-point-counterpoint--responding-to-critics.](https://www.law.upenn.edu/live/news/7146-point-counterpoint--responding-to-critics)
7. “2022 Broadband Capex Report.” USTELECOM. September 8, 2023.
[https://ustelecom.org/wp-content/uploads/2023/09/2022-Broadband-Capex-Report-final.pdf.](https://ustelecom.org/wp-content/uploads/2023/09/2022-Broadband-Capex-Report-final.pdf)
8. Antonio Villas-Boas, “‘Red Dead Redemption 2’ would have taken almost 48 hours to download a decade ago—here’s how far internet speeds have come.” Business Insider. November 5, 2019.
[https://www.businessinsider.com/internet-speeds-have-gotten-dramatically-faster-over-past-decade-2019-11;](https://www.businessinsider.com/internet-speeds-have-gotten-dramatically-faster-over-past-decade-2019-11)
“United States’ Median Country Speeds.” Speedtest Global Index: Mobile and Broadband Internet Speeds. Speedtest. Updated July 2024. Retrieved August 15, 2024.
[https://www.speedtest.net/global-index/united-states.](https://www.speedtest.net/global-index/united-states)
9. Sean Hollister, “The FCC has finally decreed that 25Mbps and 3Mbps are not ‘broadband’ speed.” The Verge. March 14, 2024.
[https://www.theverge.com/2024/3/14/24101313/fcc-new-broadband-definition-100mbps-20mbps.](https://www.theverge.com/2024/3/14/24101313/fcc-new-broadband-definition-100mbps-20mbps)
10. Elena Cawley, “Second grant will help expand broadband into rural county.” The Tullahoma Tennessee News. Updated June 16, 2018.
[https://www.tullahomanews.com/news/local/second-grant-will-help-expand-broadband-into-rural-county/article_308e0d30-d650-5905-b10a-9985826129e5.html.](https://www.tullahomanews.com/news/local/second-grant-will-help-expand-broadband-into-rural-county/article_308e0d30-d650-5905-b10a-9985826129e5.html)
11. Jay Yarow, “How Much It Would Cost Google To Become a National Cable Company Like Comcast.” Business Insider. December 7, 2012.
[https://www.businessinsider.com/how-much-it-would-cost-google-to-build-a-cable-network-2012-12.](https://www.businessinsider.com/how-much-it-would-cost-google-to-build-a-cable-network-2012-12)

References

12. Paul de Sa, "Improving the Nation's Digital Infrastructure." FCC Office of Strategic Planning and Policy Analysis. 2017.
https://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0119/DOC-343135A1.pdf.
13. Ron Shultis, "Lenoir City Utility Board owes taxpayers answers before splurging on broadband." Knox News Sentinel. February 23, 2022.
<https://www.knoxnews.com/story/opinion/2022/02/23/lenoir-city-utility-board-owes-taxpayers-answers-before-splurging-broadband/6893811001/>.
14. Tenn Code Annotated 7-52-602.
15. Sean Gonsalves, "Study Finds Chattanooga Fiber Network 10-Year ROI: \$2.69 Billion." Community Networks. February 1, 2021.
<https://communitynets.org/content/study-finds-chattanooga-fiber-network-10-year-roi-269-billion>.
16. Division of Local Government Finance, "Broadband Plans & Operations As of June 30, 2023." Tennessee Comptroller of the Treasury. February 1, 2024.
<https://comptroller.tn.gov/content/dam/cot/igf/advanced-search/BroadbandPlanReport-FiscalYear2023.pdf>.
17. Tennessee Municipal Power Electric Association, "TMEPA Member Spotlight: EPB of Chattanooga." Naylor Network. July 2017.
[https://www.naylornetwork.com/tmp-nwl/articles/index.asp?aid=451931&issueID=51936](https://www.naylornetwork.com/tmp-nwl/articles/index.asp?aid=451931&issueID=51936;);
"2023 Annual Report." Electric Power Board of Chattanooga.
https://static.epb.com/annual-reports/2023/media/EPB_Annual_Report_2023.pdf.
18. "EPB Named Best Municipal Connectivity Program in U.S. Broadband Awards at U.S. Broadband Summit." Press Release. Electric Power Board of Chattanooga. December 28, 2023.
<https://epb.com/newsroom/press-releases/epb-named-best-municipal-connectivity-program-in-us-broadband-awards/>.
19. Kontji Anthony, "Council launches audit of failed fiber optics company." Action News 5. August 7, 2007.
<https://www.actionnews5.com/story/6900550/council-launches-audit-of-failed-fiber-optics-company/>.
20. "Comptroller's Investigative Report: Newport Utilities." Tennessee Comptroller of the Treasury. November 30, 2022.
<https://comptroller.tn.gov/content/dam/cot/ia/advanced-search/2022/utilities/NewportUtilitiesReport.pdf>.
21. Tenn Code Annotated 4-29-101-124.
22. Intelligent Transportation Systems Joint Program Office, Homepage, U.S. Department of Transportation. 2003.
[https://www.itskrs.its.dot.gov/its/benecost.nsf/ID/4a7585077dbf0e21852576ac004ec144](https://www.itskrs.its.dot.gov/its/benecost.nsf/ID/4a7585077dbf0e21852576ac004ec144;);
U.S. Government Accountability Office, "Planning and Flexibility Are Key to Effectively Deploying Broadband Conduit Through Federal Highway Projects." June 27, 2012.
<https://www.gao.gov/assets/gao-12-687r.pdf>.
23. Melissa Hopkins et al, "Dig Once Policy: 16 State Models." Fiber Optic Sensing Association. July 2020.
https://downloads.regulations.gov/FHWA-2019-0037-0011/attachment_3.pdf.
24. Tennessee Advisory Commission on Intergovernmental Relations, "Broadband Internet Deployment, Availability, and Adoption in Tennessee." TN.gov. January 2017.
https://www.tn.gov/content/dam/tn/tacir/documents/2017_Broadband.pdf.
25. Tenn Code Annotated 67-6-323.
26. Ron Shultis, "Making Tennessee the Innovation Capital of America." Beacon Center of Tennessee. January 6, 2023.
<https://www.beacontn.org/wp-content/uploads/2023/01/EI-Report.pdf>.



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Ron Shultis | Director of Policy and Research | ron@beacontn.org

Jason Edmonds | Deputy Director of Policy | jason@beacontn.org

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