



# TACIR

The Tennessee Advisory Commission  
on Intergovernmental Relations



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## ***MEMORANDUM***

**TO:** Commission Members

**FROM:** Cliff Lippard *Cliff*  
Executive Director

**DATE:** 5 December 2016

**SUBJECT:** Broadband Internet Deployment, Availability, and Adoption in Tennessee—Draft Report for Review and Comment

The attached commission report is submitted for your review and comment. It was prepared in response to a request from Chairman Mark Norris for a comprehensive study of broadband internet service in Tennessee. At the Commission's June 2015 meeting, Chairman Norris asked the Commission to study the current status of broadband deployment, availability and adoption in the state, assess where there are gaps in coverage, evaluate best practices in other states for encouraging deployment and adoption, and recommend ways that Tennessee can increase broadband availability and adoption in the future. The Commission's research has found that there are already several government and private initiatives to address both broadband access and broadband adoption, supporting the recommendation that ***Tennessee should focus its efforts on supporting and coordinating these existing initiatives and on addressing any remaining coverage and adoption gaps.***

The minimum capacity necessary to provide broadband capability is 10 megabits per second download and one megabit per second upload—enough to access emails or websites, make voice or video calls, download moderately sized files, such as photo albums containing approximately 20 pictures, in less than one minute, or watch high-definition videos. While 10/1 will support most individual tasks residential users perform, it is not enough for individuals who perform multiple high-capacity tasks at once or households where more than one person uses the internet simultaneously. Similarly, businesses typically upload more information than residential users and require higher capacity upload speeds as a result. The 25 megabits per second download and 3 megabits per second upload standard for broadband that the Federal Communications Commission (FCC) adopted in January 2015 is a better measure of what communities will need to support residential and business users, though large industries, hospitals, schools and universities, and libraries may require even faster connections.

Access to broadband is improving in Tennessee, but coverage is still limited in rural areas. Approximately 89% of Tennesseans live in census blocks where at least one provider reported offering wireline or fixed wireless service with a capacity of 25/3 according to data collected by the FCC in December 2015, an increase of two percent from 2014 and seven percent from 2013. More than 93% live in census blocks where at least one provider reported offering wireline or fixed wireless service with a capacity of 10/1 as of December 2015, an increase of four percent from 2013. But rural areas are still less likely to have access than urban areas. Ninety-eight percent of Tennesseans in urban areas live in census blocks where at least one provider reported offering wireline or fixed wireless service with a capacity of 25/3 in December 2014, compared with only 66% of those in rural areas. Overall, Tennessee ranked 29th in the nation for coverage of at least 25/3 according to the FCC's 2016 Broadband Progress Report and 5th among southeastern states including the eight states that border it and South Carolina, Louisiana, and Florida.

Less than half of Tennesseans with access to broadband subscribe to the service, though adoption rates also continue to increase. Only 40% of households located in census blocks where at least one provider reported offering at least 25/3 broadband subscribed to the service according to the FCC's 2016 Broadband Progress Report, an increase of three percent from the year before. Tennessee is tied for 19th out of 45 states for which the FCC reports adoption data but is second among the twelve southeastern states.

Tennessee already has several public and private resources available for encouraging adoption. Libraries and schools provide access to training as well as service and devices for those who cannot afford their own. Discount programs for broadband service are also available from internet providers, and the federal government will expand its telephone service discount program for low-income populations to include broadband in December.

Based on these existing resources, the report makes several draft recommendations to encourage more Tennesseans to adopt service:

- Tennessee's local library system is an existing resource that is positioned to help residents improve their digital literacy skills and learn about the ways they can benefit from broadband. The Tennessee State Library and Archives (TSLA) has adopted technology services guidelines that call for all libraries serving at least 5,000 patrons to offer meeting space and devices to community organizations for digital literacy training. Libraries are also encouraged to provide digital literacy training several times a year depending on size, ranging for once per quarter for smaller libraries to twice per month for larger libraries. Further, 18 libraries throughout the state are addressing the affordability gap in their communities by lending hotspot devices that allow patrons to access wireless broadband. Providers offer hotspot devices to libraries at no cost, while monthly broadband service costs approximately \$32 per device. ***Increasing funding so that all libraries meet TSLA's guidelines would improve access to digital literacy***

**resources in communities throughout the state, and expanding the hotspot lending program would encourage more individuals to use broadband by increasing their access to service they could not afford on their own.** Ensuring that all libraries meet TSLA's guidelines would cost approximately \$144,640 per year, according to TSLA.

- As community anchor institutions, schools and libraries are vital resources that facilitate broadband use by making service available to students and community members who aren't able to afford it on their own. The federal E-Rate program provides subsidized broadband service to schools and libraries. The program's subsidies cover up to 90% of the cost of service. While every school and library in the state has internet access, not all have broadband quality service. ***The Department of Education and the Tennessee State Library and Archives should continue to work with schools and libraries to help them maximize the state's use of E-Rate funding to ensure that all schools and libraries have broadband. They should explore options to better educate them about the funds and the application process and to better assist them administratively in completing the applications.***
- Broadband adoption programs typically offer some combination of digital literacy training, service discounts, and device subsidies. The Tech Goes Home program that began in Boston and the Anytime Access for All and Connect Home initiatives in Nashville, have combined digital literacy resources with service discounts and device subsidies to maximize their effectiveness. Adoption programs that target specific populations such as the elderly and families with schoolchildren also tend to be more successful. ***The state, through the coordinated efforts of its existing agencies, including the Department of Economic and Community Development, the Department of Education, and the regional development districts, and its existing local assistance resources, including the Municipal Technical Advisory Service and the County Technical Assistance Service, should encourage and assist local governments in establishing targeted broadband adoption programs that combine training and financial assistance.***

The report also makes several draft recommendations to increase broadband availability in Tennessee:

- Reducing the costs of expanding networks by funding grants to providers is one option to help increase access to broadband throughout the state. The FCC is already offering grants totaling up to \$210 million over seven years through the Connect America Fund phase II (CAF II) to three providers in Tennessee. Providers must use these grants to offer broadband of at least ten megabits per second download and one megabit per

second upload to more than 93,000 homes and businesses. The number of remaining Tennessee households in census blocks where no provider reports offering 10/1 service after accounting for the CAF II program will likely total approximately 111,000. Several states have their own grant programs for expanding broadband coverage. The most successful of these, including Maine and Minnesota, use a competitive bidding process to choose projects to ensure that state funds maximize coverage in unserved and underserved areas. Tennessee Code Annotated, Section 7-59-315, already creates a broadband deployment fund for Tennessee, but no funds have ever been appropriated to it. ***Tennessee could use the broadband deployment fund to provide competitive grants to unserved or underserved areas not already being targeted by Connect America Fund grants.*** Expanding coverage of 10/1 to the remaining 111,000 households that are not in census blocks eligible for CAF II could cost between \$122 million and \$554 million. But some of these households may be served as a result of subsequent rounds of Connect America Fund grants, leaving a smaller gap for any state grant program to fill.

- Eliminating Tennessee's sales tax on equipment purchases could lower construction costs and thus encourage providers to build out their networks, and providers that are legacy telephone companies would benefit from having their telecommunications property assessed at the commercial rates for property tax purposes like legacy cable television companies rather than the higher utility rates. But eliminating the sales tax on broadband equipment would reduce state revenue by approximately \$45.5 million per year and local revenue by approximately \$16.3 million per year according to the Tennessee Department of Revenue, and assessing legacy telephone companies at lower rates for property tax purposes would cost local governments more than \$16 million per year according to the Tennessee Comptroller of the Treasury. Moreover, neither approach is targeted to increase broadband investment in unserved and underserved areas. Instead, ***Tennessee could offer credits against franchise and excise taxes for broadband infrastructure investments, and target improvements to unserved and underserved areas by giving larger credits for investments in those unserved and underserved areas.*** Mississippi has a similar tax credit against franchise and excise taxes for broadband infrastructure investment that provides larger credits for investments in regions of the state that have lower levels of economic development. ***Like is done with other tax credit programs such as the low-income housing tax credit, the state could cap the amount of credits available statewide per year and use competitive application processes to award credits.***

- Local governments already have several options for expanding broadband coverage in their jurisdictions by reducing regulatory burdens on providers seeking to expand their networks. Access to rights of way is governed by local permitting processes that can delay projects and increase costs, and zoning regulations effectively prevent wireless infrastructure from being built in certain communities. Controlling access to rights of way and regulating land use through zoning are vital local government functions, but some communities may find they can attract private investment to expand coverage by streamlining local regulatory processes. ***To assist communities that want to streamline local regulations, Tennessee could, like Indiana and Wisconsin, designate communities that adopt a checklist of permitting and zoning procedures as "broadband ready communities" to signal providers that they have removed regulatory barriers to broadband investment.***
- Municipalities with electric systems are authorized to provide broadband within their electric service areas by Tennessee Code Annotated, Section 7-52-601 et seq., and ten currently do so. Senate Bill 1134 by Senator Janice Bowling and House Bill 1303 by Representative Kevin Brooks in the 109th General Assembly would have removed the territorial restriction on municipal broadband providers. But municipalities that build broadband infrastructure outside of their electric service areas and taxing jurisdictions put electric ratepayers and municipal taxpayers at risk in the event that they are unable to earn enough revenue from subscribers to make debt payments on bonds issued to expand their systems. Moreover, Morristown Utilities, which is one of two systems allowed to provide broadband outside its electric service area under state law (the other system, Covington, has since sold its network), has not chosen to expand service beyond a few communities because of the cost of doing so. Electric cooperatives—which are not currently authorized to provide broadband under Tennessee law—have helped expand broadband access in rural areas in other states by building their own networks and serving as retail internet service providers. Although existing telephone cooperatives are allowed to provide broadband and do in many rural areas, their service territories do not extend as far as those of the state’s electric cooperatives. The state could simply authorize electric cooperatives to provide retail broadband service in their electric service areas, but this would require them to build their own central office facilities, which would likely be cost prohibitive for many cooperatives. ***A better option would be to allow the state’s electric cooperatives to partner with existing providers, including municipal providers, to provide broadband service in the cooperatives’ electric service areas. Municipal utilities in these partnerships would be forbidden from issuing bonds to fund the construction of broadband networks outside their electric service areas, but they could use their existing central office facilities—which***

***already have excess capacity—to operate the electric cooperatives’ networks as wholesalers. Electric cooperatives would build and maintain the network infrastructure inside their electric service areas and function as retail internet service providers.***

The report also makes additional recommendations related to coordination and planning:

- Local planning and coordination with and among existing state agencies will be essential for increasing both adoption and access in Tennessee. Several states have created separate broadband offices to coordinate access and adoption strategies. While this approach can enable better coordination, it can create duplication, add complexity to decision making, and add to the cost of governing. Fortunately, this type of strategic coordination can be accomplished without having to create any new state agencies or offices. ***Tennessee could coordinate its broadband efforts using a standing working group made up of state and local officials, representatives of broadband providers, and representatives of the many not-profit organizations working to increase internet connectivity.*** An example of such a work group can be found with the state’s Basic Education Program Review Committee, which meets periodically to help the administration and legislature set education funding priorities.
- ***The state could also include broadband as part of its annual infrastructure needs survey.*** By reporting broadband as a separate type within the transportation and other utilities category, the state can better calculate what the cost of meeting its broadband infrastructure needs are for the next five years.

A final report will be submitted for approval at the January 2017 Commission meeting.