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July 24, 2014

ACCEPTED/FILED

JUL 24 2014

Federal Communications Commission  
Office of the Secretary

**By Hand Delivery**

Ms. Marlene H. Dortch, Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, D.C. 20554

Re: *Petition of the Electric Power Board of Chattanooga, Tennessee, Pursuant to Section 706 of the Telecommunications Act of 1996, for Removal of Barriers to Broadband Investment and Competition*

Dear Ms. Dortch:

Please accept for filing the attached original and two copies of Chattanooga EPB's Petition for Removal of Barriers to Broadband Investment and Competition. Please also return a date stamped copy to the messenger.

Thanks for your assistance.

Sincerely,



Jim Baller

cc: Chairman Tom Wheeler  
Commissioner Mignon Clyburn  
Commissioner Jessica Rosenworcel  
Commissioner Ajit Pai  
Commissioner Michael O'Reilly  
WCB Chief Julie Veach  
Hon. Robert E. Cooper, Jr.,  
Attorney General of Tennessee

BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C.

ACCEPTED/FILED

JUL 24 2014

Federal Communications Commission  
Office of the Secretary

In the Matter of )  
 )  
The Electric Power Board of )  
Chattanooga, Tennessee ) File No. \_\_\_\_\_  
 )  
Petition for Preemption of a Portion of )  
Section 7-52-601 of the Tennessee Code )  
Annotated )

PETITION PURSUANT TO SECTION 706 OF THE  
TELECOMMUNICATIONS ACT OF 1996  
FOR REMOVAL OF STATE BARRIERS TO BROADBAND  
INVESTMENT AND COMPETITION

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July 24, 2014

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**VERIFICIATIONS**

**CERTIFICATE OF SERVICE**

## PETITION

### I. INTRODUCTION AND SUMMARY

Pursuant to Section 706 of the Telecommunication Act of 1996, 47 U.S.C. § 1302, the Electric Power Board of Chattanooga (“EPB”), an independent board of the City of Chattanooga, Tennessee, brings this petition for removal of the barrier to deployment of advanced telecommunications capability posed by the territorial restriction contained in Tenn. Code Ann. § 7-52-601 (“Section 601”), which prevents EPB from offering in Tennessee Internet and video programming services outside of EPB’s electric service territory. As shown below, the territorial restriction is an impermissible barrier to broadband deployment that Congress requires the Commission to remove.<sup>1</sup>

EPB offers ultra-high-speed Internet access, video programming, and voice services over a fiber-optic communications network that permits delivery of these services to every one of its 170,000 residential and commercial customers throughout its 600 square mile electric service area.<sup>2</sup> EPB is, however, surrounded by a digital desert in which businesses and residents are unable to access broadband Internet service or must make do with very limited speeds.<sup>3</sup>

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<sup>1</sup> 47 U.S.C. § 1302(b) (2010). Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996), as amended in relevant part by the Broadband Data Improvement Act, Pub. L. No. 110-385, 122 Stat. 4096 (2008) (“BDIA”), is now codified in Title 47, Chapter 12 of the United States Code. *See* 47 U.S.C. § 1301, *et seq.*

<sup>2</sup> About 63,000 of EPB's electric service customers subscribe to EPB's fiber services. All of EPB's residential Internet customers are provided at least 100 Mbps symmetrical service. They may choose to upgrade, for \$12.00 extra a month, to 1 Gbps symmetrical service. Rates are even lower if customers also choose to purchase bundled packages including video programming and voice services.

<sup>3</sup> *See* <http://www.timesfreepress.com/news/2014/apr/20/the-digital-divide-just-an-hour-from-gig-city/>. The map provided as Exhibit 1 shows large areas neighboring EPB's electric service territory that are unserved or underserved by broadband. All exhibits to this Petition are available online at <https://www.epb.net/FCCPetitionExhibits/>.

In this petition, EPB seeks the opportunity to respond to requests for access to provide advanced telecommunication services that EPB regularly receives from citizens and businesses located outside EPB's electric service territory. Under current Tennessee law, Tennessee municipal electric systems, including EPB,<sup>4</sup> are authorized to provide telecommunications services anywhere in the state.<sup>5</sup> Even though the high-speed fiber optics system that EPB would use to deliver such telecommunications services<sup>6</sup> would also permit it to easily provide advanced telecommunications capabilities and services – including Internet access and Internet Protocol Television – the territorial restriction contained in Section 601 prohibits EPB from using the same fiber for delivery of advanced telecommunications services outside its electric service territory.

Apart from the territorial restriction, EPB is complying, and would continue to comply, with the other requirements in Tenn. Code Ann. §§ 401 and 601. In particular, EPB does not, and would not, use revenues from EPB's electric system to subsidize EPB's communications services. Nor would EPB provide Internet access and video programming services in any city or county that does not wish it to do so.

EPB seeks the authority to offer advanced telecommunications services in areas outside its electric service territory where the cost of the services will be covered by service revenue, contributions in aid of construction, or other capital or operating support. EPB recognizes that

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<sup>4</sup> There are 61 municipal electric systems in Tennessee. Nine of these systems currently provide telecommunication and advanced telecommunication services.

<sup>5</sup> See Tenn. Code Ann. § 7-52-401, *et seq.*, and discussion at [Section III, *infra.*]. Tenn. Code Ann. § 7-52-403(b) contains a restriction prohibiting a municipal electric system from providing telecommunications service in the service territory of one rural telephone cooperative. That restriction is not significant to EPB.

<sup>6</sup> EPB, like many other telecommunications companies, provides telecommunication services over a fiber optic network using voice over Internet protocol ("VOIP"). The eight other Tennessee municipal electric systems that also provide telecommunications services also do so using fiber and VOIP technology.

advanced telecommunications services cannot be viably provided to some rural areas without governmental support, such as support from the Universal Service Fund.

EPB petitions the Commission to find that advanced telecommunications capabilities, including high-speed broadband services, are not being deployed on a reasonable and timely basis in communities near EPB's electric service area because of the territorial restriction in Section 601 that limits EPB's deployment of Internet and video programming to its electric service area. The Commission should find that, absent Section 601's electric service area limitation, broadband investment would occur on a reasonable and timely basis in the areas surrounding EPB's current footprint. The Commission should therefore take immediate action to remove the barrier created by the territorial restriction contained in Section 601 and declare it to be unenforceable.

The territorial restriction contained in Section 601 frustrates the Congressional goal that all Americans should have access to broadband capability, by prohibiting municipal electric utilities in Tennessee, including EPB, from providing broadband services and video programming outside of their electric service footprint, despite the fact that such entities are otherwise authorized to provide telecommunications services throughout the state of Tennessee. The explicit barrier created by Section 601's territorial restriction is precisely the type of legal barrier that Congress directed the Commission to sweep away in Section 706 of the Telecommunications Act of 1996.

EPB delivers high quality video programming services over its fiber network using Internet Protocol technology, providing a competitive alternative to traditional cable television. In order for it to be financially feasible for Tennessee municipal electric systems, including EPB, to extend their broadband networks into nearby communities, they must be freed from the electric service area limitation of Section 601 not only for Internet access, but also for services delivered

over the broadband networks, such as video programming services. EPB must be able to provide all communications services, including video programming services, that its potential customers desire for it to be economically feasible for EPB to expand its broadband network into adjacent areas. The Commission has repeatedly recognized the important link between the ability to provide broadband services and the ability to provide video programming using broadband. For example, in its *Terrestrial Order*,<sup>7</sup> the Commission observed:

[B]y impeding the ability of [multichannel video programming distributors] to provide video service, unfair acts involving [video service] can also impede the ability of MVPDs to provide broadband services. Allowing unfair acts involving [video service] to continue where they have this effect would undermine the goal of promoting the deployment of advanced services that Congress established as a priority for the Commission. This secondary effect heightens the urgency for Commission action.<sup>8</sup>

The same principle applies in this case.

The territorial restriction contained in Section 601 is a barrier to broadband infrastructure investment that impedes the reasonable and timely availability of broadband in portions of Tennessee, and the Commission has clear and explicit authority under Section 706 to remove this barrier in order to carry out the Congressional objective of advancing the widespread availability of broadband capabilities in a reasonable and timely manner.

## **II. THE MANDATE OF CONGRESS THAT THE COMMISSION IDENTIFY AND REMOVE BARRIERS TO THE DEPLOYMENT OF ADVANCED TELECOMMUNICATIONS SERVICES**

In the Spring of 1994, as Congress was considering what was to become the Telecommunications Act of 1996, the Senate Committee on Commerce, Science and Transportation held a hearing at which representatives of investor-owned, cooperatively-owned,

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<sup>7</sup> *In the Matter of Review of the Commission's Program Access Rules and Examination of Programming Tying Arrangements*, 25 FCC Rcd. 746, 2010 WL 236800 (rel. Jan. 20, 2010) (footnotes omitted).

<sup>8</sup> *Id.* at 25 FCC Rcd. at 772, ¶ 36, 2010 WL 236800 at \*14.

and municipally-owned electrical utilities testified about the contributions that electric utilities of all kinds could make to the development of a "National Information Highway." In particular, Billy Ray, General Manager of the Electric Plant Board of Glasgow, Kentucky, testified about the remarkable experience of that innovative rural community:

In the 1980s, Glasgow, a community of 13,000 residents, was served -- but not very well -- by a single, for-profit cable company. The citizens were unhappy with the quality and the price of their cable TV service, so they turned to their municipally owned electric system for help. This plea from the public coincided with the city utility's recognition of the need for an effective demand-side management and load shedding system to avoid huge increases in power costs driven by surges in peak power demand. The Glasgow Electric Plant Board recognized that the same coaxial cable system used to deliver television programming could also be utilized by citizens to manage their power purchases. So our municipally owned electric utility built its coaxial distribution control system which also provides a competing, consumer-owned cable TV system. This new system not only allowed consumers to purchase electricity in real time and lower their peak electrical demand, thus saving money on their electric bills, it provided twice as many television channels as the competing, for-profit cable company at not-for-profit rates -- and delivered better service to boot. Big surprise -- the private company decided to drop its rates by roughly 50 percent and improve its service, too.

But the Glasgow Electric Plant Board didn't stop there. We wired the public schools, providing a two-way, high-speed digital link to every classroom in the city. We are now offering high-speed network services for personal computers that give consumers access to the local schools' educational resources and the local libraries. Soon this service will allow banking and shopping from home, as well as access to all local government information and data bases. We are now providing digital telephone service over our system. That's right -- in Glasgow, everyone can now choose to buy their dial tone from either GTE or the Glasgow Electric Plant Board.

The people of Glasgow won't have to wait to be connected to the information superhighway. They're already enjoying the benefits of a two-way, digital, broadband communications system. And it was made possible by the municipally owned electric system.<sup>9</sup>

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<sup>9</sup> See Testimony of William J. Ray, Superintendent, Glasgow Electric Plant Board, Glasgow, KY, on Behalf of the American Public Power Association, Hearings on S.1822 Before the Senate Committee on Commerce, Science, and Transportation, 103d Cong., 2d Sess. at 355-56, 1994 WL 232976 (May 11, 1994).

Later in the hearing, Senator Trent Lott (R-MS), one of the most prominent leaders of Congress at the time, as well as a Senate manager of the Telecommunications Act, thanked the panel, particularly Mr. Ray. “I found it very interesting, and Mr. Ray, I was very interested in the experience you have had there in Kentucky.”<sup>10</sup> Senator Lott then went on to say, “I think the rural electric associations, the municipalities, and the investor-owned utilities, are all positioned to make a real contribution in this telecommunications area, and I do think it is important that we make sure we have got the right language to accomplish what we wish accomplished here.”<sup>11</sup>

By the time the Telecommunications Act became law on February 8, 1996, access to advanced telecommunications capabilities had already become important to a growing number of Americans. Although Congress could not accurately predict how fast and in what ways the need for access to advanced communications capabilities would evolve, Congress could – and did – foresee that such access would become essential for all Americans. As a result, in Section 706(a) of the Act, Congress commanded the Commission and the States to encourage the deployment of advanced telecommunications capabilities on a reasonable and timely basis to all Americans, using all regulatory methods at their disposal to remove barriers to broadband investment. In Section 706(b), Congress also required the Commission to take affirmative action to acquire information about the pace of deployment of advanced telecommunications capabilities, to decide whether such deployment was occurring on a reasonable and timely basis, and, if the Commission found that it was not, to act immediately to remove barriers to infrastructure investment and to promote competition.

In 1999, in its first Section 706 Report, the Commission defined the term “advanced telecommunications capabilities” – which it used interchangeably with “broadband” – as “having

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<sup>10</sup> *Id.* at 378.

<sup>11</sup> *Id.* at 379.

the capability of supporting, in both the provider-to-consumer (downstream) and the consumer-to-provider (upstream) directions, a speed (in technical terms, "bandwidth") in excess of 200 kilobits per second in the last mile."<sup>12</sup> This rate, the Commission explained, was "enough to provide the most popular forms of broadband -- to change web pages as fast as one can flip through the pages of a book and to transmit full-motion video."<sup>13</sup> Based on this definition, the Commission concluded,

Overall, we find that, although the consumer broadband market is in the early stages of development, it appears, at this time, that deployment of broadband capability is reasonable and timely. Nevertheless, this is an early snapshot of a fledgling market. We find that there is already a significant initial demand for broadband capability and we expect demand to grow substantially in the coming years. We are committed to ensuring that deployment of broadband capability to the consumer market remains timely and reasonable as the market for broadband develops, and that the supply of broadband meets consumer demand.<sup>14</sup>

During the next eight years, the Commission continued to use 200 kilobits per second as its definition of advanced telecommunications (or broadband) capabilities, and it continued to find that deployment at that level was occurring on a reasonable and timely basis. This prompted widespread criticism.<sup>15</sup> In 2008, Congress responded to this criticism by enacting the Broadband

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<sup>12</sup> *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, 14 FCC Rcd. 2398, ¶ 20, 1999 WL 672549 (rel. Feb. 2, 1999).

<sup>13</sup> *Id.* at 2406, ¶ 20, 1999 WL 672549.

<sup>14</sup> *Id.* at 2405, ¶ 16, 1999 WL 672549.

<sup>15</sup> *See, e.g., NPRM*, Statement of Commissioner Jonathan S. Adelstein, WC Docket No. 07-38, *In Re Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services*, Docket No. 07-38 (rel. Apr. 16, 2007) ("We should start by updating our current definition of high-speed of just 200 kbps in one direction to something more akin to what consumers receive in countries with which we compete, speeds that are magnitudes higher than our current definitions. We need to set ambitious goals, shooting for real high-bandwidth broadband deployment, rather than being content to hit targets set almost eight years ago."); *see also* S. Derek Turner, *Broadband Reality Check*, Free Press (Aug. 2005), available at [http://www.freepress.net/sites/default/files/fp-legacy/broadband\\_report.pdf](http://www.freepress.net/sites/default/files/fp-legacy/broadband_report.pdf); Karl

Data Improvement Act (“BDIA”).<sup>16</sup> In Section 101 of the Act, codified in 47 U.S.C. § 1301, Congress opened with the following two findings:

(1) The deployment and adoption of broadband technology has resulted in enhanced economic development and public safety for communities across the Nation, improved health care and educational opportunities, and a better quality of life for all Americans.

(2) Continued progress in the deployment and adoption of broadband technology is vital to ensuring that our Nation remains competitive and continues to create business and job growth.

In Sections 102-103 of the BDIA,<sup>17</sup> Congress reaffirmed and expanded the Commission’s authority under Section 706 of the Telecommunications Act. Among other things, Congress required the Commission to issue broadband deployment reports “annually” rather than “regularly,” and it required the Commission to gather detailed demographic and other information for unserved areas. Congress also required the Commission to make international comparisons and to conduct periodic surveys of broadband usage by American consumers in urban, suburban, and rural area in the large business, small business, and residential consumer markets.

Four months later, in February 2009, Congress acted again to accelerate deployment, adoption, and use of broadband Internet connectivity for all Americans. As part of the American Recovery and Reinvestment Act of 2009,<sup>18</sup> Congress directed the Commission to develop a “National Broadband Plan” to ensure that “all people of the United States have access to

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Bode, *FCC Finally Realizes 200kbps is Not Broadband Votes to reform long-flawed broadband data collection, albeit after-the-fact*, Broadband Reports (Mar. 19, 2008), available at <http://www.dslreports.com/shownews/FCC-Finally-Realizes-200kbps-is-Not-Broadband-92792>.

<sup>16</sup> Pub. L. No. 110-385, 122 Stat. 4096 (Oct. 10, 2008).

<sup>17</sup> Codified as 47 U.S.C. §§ 1302-1303.

<sup>18</sup> *American Recovery and Reinvestment Act of 2009*, Pub. L. No. 111-5, § 6001(k)(2), 123 Stat. 115 (Feb. 17, 2009) (“*Recovery Act*”).

broadband capability.”<sup>19</sup> Congress also appropriated \$7.2 billion in federal stimulus funds in furtherance of this goal. Notably, in Section 6001(e)(1) of the Recovery Act, Congress explicitly included municipalities among the entities that were eligible for a share of these funds.<sup>20</sup>

On March 16, 2010, the Commission issued its National Broadband Plan.<sup>21</sup> The Commission not only reiterated its understanding of the critical importance of making broadband Internet access available to all Americans, but it also underscored the important role that municipalities can play in helping America achieve this goal.

Today, high-speed Internet is transforming the landscape of America more rapidly and more pervasively than earlier infrastructure networks. Like railroads and highways, broadband accelerates the velocity of commerce, reducing the costs of distance. Like electricity, it creates a platform for America’s creativity to lead in developing better ways to solve old problems. Like telephony and broadcasting, it expands our ability to communicate, inform and entertain.

Broadband is *the* great infrastructure challenge of the early 21st century. But as with electricity and telephony, ubiquitous connections are means, not ends. It is what those connections enable that matters. Broadband is a platform to create today’s high-performance America—an America of universal opportunity and unceasing innovation, an America that can continue to lead the global economy, an America with world-leading, broadband-enabled health care, education, energy, job training, civic engagement, government performance and public safety.

...  
Municipal broadband has risks. Municipally financed service may discourage investment by private companies. Before embarking on any type of broadband buildout, whether wired or wireless, towns and cities should try to attract private

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<sup>19</sup> *Id.* at 516.

<sup>20</sup> Section 6001(e)(1)(A) states that eligible applicants shall “[b]e a *State or political subdivision thereof*, the District of Columbia, a territory or possession of the United States, an Indian tribe (as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450(b)) or native Hawaiian organization; (B) a nonprofit--(i) foundation, (ii) corporation, (iii) institution, or (iv) association; or (C) any other entity, including a broadband service or infrastructure provider, that the Assistant Secretary finds by rule to be in the public interest. In establishing such rule, the Assistant Secretary shall to the extent practicable promote the purposes of this section in a technologically neutral manner . . . .” (emphasis supplied). Codified as 47 U.S.C. § 1305(e)(1)(A).

<sup>21</sup> *Connecting America: the National Broadband Plan* at 3 (adopted Mar. 15, 2010), available at <http://transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf>.

sector broadband investment. But in the absence of that investment, they should have the right to move forward and build networks that serve their constituents as they deem appropriate.<sup>22</sup>

The National Broadband Plan did not just focus on ensuring that all Americans have access to minimal levels of broadband connectivity. Rather, the Plan also underscored the importance of higher-end broadband connectivity to the advancement of America's "National Purposes" in several areas, including Health Care (Chapter 10), Education (Chapter 11), Economic Development (Chapter 12), Energy and Environment, including smart transportation systems (Chapter 13), Government Performance (Chapter 14), Civic Engagement (Chapter 15), and Public Safety (Chapter 16). The Plan emphasized the need to act quickly to expand the reach and capability of the nation's broadband infrastructure:

It is critical that the country move now to enact the recommendations in this part of the plan in order to accelerate the transformation that broadband can bring in areas so vital to the nation's prosperity. Diffusion of new technologies can take time, but the country does not have time to spare. There are students to inspire, lives to save, resources to conserve and people to put back to work. Integrating broadband into national priorities will not only change the way things are done, but also the results that can be achieved for Americans.<sup>23</sup>

In July 2010, in its *Sixth Broadband Deployment Report*, the Commission at last discarded its obsolete definition of advanced telecommunications capability, announced a new definition – 4 megabits per second downstream and 1 megabits per second upstream -- and found that, under the new definition, advanced telecommunications capabilities were not being deployed in a reasonable and timely manner.<sup>24</sup>

4. In determining whether broadband is being deployed to all Americans in a reasonable and timely fashion, this Sixth Report takes the overdue step of raising

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<sup>22</sup> *Id.* at 3.

<sup>23</sup> *Id.* at 194.

<sup>24</sup> *Sixth Broadband Deployment Report*, 25 FCC Rcd. 9556, 9558-60, ¶¶ 4-5, 2010 WL 2862584, \*1-\*2 (rel. July 20, 2010).

the minimum speed threshold for broadband from services in “excess of 200 kilobits per second (kbps) in both directions” – a standard adopted over a decade ago in the *1999 First Broadband Deployment Report*. As anticipated in previous broadband deployment reports, “technologies, retail offerings, and demand among consumers” – or in other words, network capabilities, consumer applications and expectations – have evolved in ways that demand increasing amounts of bandwidth and require us to “[raise] the minimum speed for broadband from 200 kbps to, for example, a certain number of megabits per second (Mbps).” To put 200 kbps in context, in 1999, voice-over-broadband or interconnected voice over Internet protocol (VoIP) was just beginning to emerge as a consumer application, and web pages were almost entirely text-based, with little embedded graphics or video, making 200 kbps an arguably sufficient benchmark for broadband capability at the time. Today, interconnected VoIP is subscribed to by over 21 million Americans, most web sites feature rich graphics and many embed video, and numerous web sites now exist primarily for the purpose of serving video content to broadband users. As a result, and as predicted by previous broadband deployment reports, services at 200 kbps are not now capable of “originat[ing] and receiv[ing] high-quality voice, data, graphics, and video telecommunications,” as those capabilities are delivered by today’s technology and experienced and expected by today’s broadband users. As a result, we find that the 200 kbps threshold is no longer the appropriate benchmark for measuring broadband deployment for the purpose of this broadband deployment report.

5. As an alternative benchmark for this year’s report, and given that this year’s inquiry was conducted in conjunction with the National Broadband Plan proceeding, we find it appropriate and reasonable to adopt instead the minimum speed threshold of the national broadband availability target proposed in the National Broadband Plan. The National Broadband Plan recommends as a national broadband availability target that every household in America have access to affordable broadband service offering actual download (i.e., to the customer) speeds of at least 4 Mbps and actual upload (i.e., from the customer) speeds of at least 1 Mbps. This target was derived from analysis of user behavior, demands this usage places on the network, and recent experience in network evolution. It is the minimum speed required to stream a high-quality --even if not high-definition-- video while leaving sufficient bandwidth for basic web browsing and e-mail, a common mode of broadband usage today that comports directly with section 706’s definition of advanced telecommunications capability. As the target for the broadband capability that the National Broadband Plan recommends should be available to all Americans, this speed threshold provides an appropriate benchmark for measuring whether broadband deployment to all Americans is proceeding in a reasonable and timely fashion....<sup>25</sup>

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<sup>25</sup> *Id.* at ¶¶ 4-5 WL 2862584 at \*2.

Significantly, even applying the very limited 4/1 Mbps standard, the Commission found that “broadband remain[ed] unavailable to approximately 14 to 24 million Americans.”<sup>26</sup>

Within two years, the Commission realized that its benchmark of 4/1 Mbps might already have outlived its usefulness. In its *Eighth Broadband Deployment Report*, the Commission stated that “We are cognizant that demand changes over time. Usage trends are driving up demand for bandwidth and services, and users are attaching multiple Internet-enabled devices to a single, shared household broadband connection.”<sup>27</sup> In an accompanying Notice of Inquiry, the Commission elaborated:

8. As noted above, since the Commission began relying on the 4 Mbps/1 Mbps speed benchmark in 2010, broadband providers have developed and launched much higher speed networks and services. In addition, we recognize that consumers’ broadband experiences are influenced by how they use broadband, and there is evidence that consumers are using faster speeds, greater total bandwidth, and more advanced applications. Furthermore, section 706 focuses on a consumer’s ability to originate and receive certain specific services, including “high-quality voice, data, graphics, and video telecommunications.” . . .

9. With respect to video services in particular, when the Commission adopted the 4 Mbps/1 Mbps speed threshold, it determined that it adequately met consumers’ needs for video over broadband at that time. Speeds of 4 Mbps/1 Mbps enable consumers to stream standard definition video in near real-time, which consumes anywhere from 1-5 Mbps depending on a variety of factors, while still using basic functions such as e-mail and Web browsing. However, there is evidence that consumers are accessing and generating video content over broadband to a greater degree than in previous years, and are increasingly using their broadband connections to view high-quality video and use advanced video applications. Cisco, in its latest report, predicts that Internet video traffic will account for 54% of all Internet data traffic by 2016, up from 51% in 2011. North American Internet video traffic is predicted to achieve 20% compound annual growth from 2011 to 2016. Higher-quality video can require additional bandwidth. High-definition video can require downstream speeds of 5-12 Mbps, commensurate with the quality of the video. . . .

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<sup>26</sup> *Id.* at ¶ 5, 2010 WL 2862584 at \*2.

<sup>27</sup> *Eighth Broadband Deployment Report*, 27 FCC Rcd 10342, ¶ 20, 2012 WL 3612019, \*11 (rel. Aug. 21, 2012).

10. We also have observed that an increasing number of households are attaching multiple devices to a single, shared household broadband connection. The bandwidth requirements of a household can increase as the number of devices sharing a broadband connection increases, particularly if multiple users are accessing video content with that connection. How should this usage pattern affect our speed threshold analysis? The Commission in the *Household Broadband Guide* compared the minimum download speed needs for light, moderate, and high household use with one, two, three, or four devices at a time. For example, if a household simultaneously uses three devices for basic functions and one high-demand application such as streaming HD, video conferencing, or online gaming, 6 to 15 Mbps could be required. . . .<sup>28</sup>

The discussion above focused on the *minimum* speeds necessary for an Internet access service to meet the Commission's evolving definition of "advanced telecommunications capability." At the same time, the Commission has also emphasized the need for America to make reasonable and timely progress toward having world-class capabilities at higher levels of advanced telecommunications capabilities. For example, in the National Broadband Plan, the Commission set forth a national goal of 100 Megabits to 100 Million households by 2020. In addition, the Commission called for efforts to push past 100 Megabits as early as possible:

The U.S. should lead the world in ultra-high-speed broadband testbeds as fast, or faster, than anywhere in the world. In the global race to the top, this will help ensure that America has the infrastructure to host the boldest innovations that can be imagined. Google announced a one gigabit testbed initiative just a few days ago – and we need others to drive competition to invent the future.<sup>29</sup>

Two months after the Commission issued its challenge, Chattanooga's EPB made 1 Gigabit symmetrical service available to every one of its 170,000 residential and commercial customers. Chattanooga and the other communities within EPB's electric service territory became the first communities in the United States to fulfill the Commission's challenge by

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<sup>28</sup> *Ninth Broadband Progress Report Notice of Inquiry*, 27 FCC Rcd. 10523, ¶¶ 8-10, 2012 WL 3612021, \*4 (rel. Aug. 21, 2012).

<sup>29</sup> Julius Genachowski, "Broadband: Our Enduring Engine for Prosperity and Opportunity," as prepared for delivery at NARUC Conference (Feb. 16, 2010), *available at* [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-296262A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-296262A1.pdf).

deploying the fastest Internet service in the nation. Then-Chairman Julius Genachowski highlighted Chattanooga's achievement when the Commission issued its Gigabit Cities Challenge in January 2013 to encourage providers and local and state governments to bring at least one ultra-fast Gigabit Internet community to every state in United States by 2015:

American economic history teaches a clear lesson about infrastructure. If we build it, innovation will come. The U.S. needs a critical mass of gigabit communities nationwide so that innovators can develop next-generation applications and services that will drive economic growth and global competitiveness.”

Speeds of one gigabit per second are approximately 100 times faster than the average fixed high-speed Internet connection. At gigabit speeds, connections can handle multiple streams of large-format, high-definition content like online video calls, movies, and immersive educational experiences. Networks cease to be hurdles to applications, so it no longer matters whether medical data, high-definition video, or online services are in the same building or miles away across the state.

Gigabit communities spur innovators to create new businesses and industries, spark connectivity among citizens and services, and incentivize investment in high-tech industries. . . .

. . . .

Communities across the country are already taking action to seize the opportunities of gigabit broadband for their local economies and bring superfast broadband to homes. In Chattanooga, Tennessee, a local utility deployed a fiber network to 170,000 homes. Thanks to the city's investment in broadband infrastructure, companies like Volkswagen and Amazon have created more than 3,700 new jobs over the past three years in Chattanooga. . . .<sup>30</sup>

In summary, in enacting Section 706 of the Telecommunications Act of 1996, Congress foresaw that access to advanced telecommunications capabilities would become critically important to all Americans in the years ahead. Congress gave the Commission broad authority and discretion to determine when, where, and how to ensure that all Americans would have such

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<sup>30</sup> FCC Announcement: FCC Chairman Julius Genachowski Issues Gigabit City Challenge to Providers, Local, and State Governments to Bring at Least One Ultra-Fast Gigabit Internet Community to Every State In U.S. By 2015 (Jan. 18, 2013), *available at* <http://www.fcc.gov/document/fcc-chairman-genachowski-issues-gigabit-city-challenge>.

access on a reasonable and timely basis. In charging the Commission with this responsibility, Congress was well aware of the significant contributions that municipalities could make – indeed, Congress undoubtedly understood that it would be impossible to make the benefits of broadband connectivity available to “all Americans” on a reasonable and timely basis without the participation of municipalities, particularly in areas in which the private sector found investment unattractive. Furthermore, in the nearly two decades since the enactment of Section 706, both Congress and the Commission have repeatedly acted in ways that reinforce this conclusion.

### **III. EPB’S ADVANCED TELECOMMUNICATION NETWORK AND THE BARRIER TO EPB’S ABILITY TO RESPOND TO REQUESTS FOR ITS EXPANSION**

In this petition, EPB seeks the opportunity to respond to requests, which EPB regularly receives from citizens and businesses located outside EPB’s electric service territory, for access to advanced telecommunication capabilities and services. Under current Tennessee law, Tennessee municipal electric systems, including EPB,<sup>31</sup> are authorized to provide telecommunications services using high-speed fiber anywhere in the state.<sup>32</sup> Tennessee municipal electric systems are

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<sup>31</sup> Nine of the 61 municipal electric systems in Tennessee, including EPB, currently provide telecommunication and advanced telecommunications capabilities and services.

<sup>32</sup> Tenn. Code Ann. § 7-52-401, *et seq.*, contains no territorial restriction, but, at the time of its passage, required a municipal electric system to obtain authority from the Tennessee Regulatory Authority (“TRA”), in the form of a certificate of convenience and necessity (“CCN”), to offer telecommunication services within an approved territory. So long as local approval was granted, the only territorial limitation was that which was imposed by the CCN granted by the TRA. In 2007, EPB obtained a statewide CCN, save for the service areas of existing telephone cooperatives with fewer than 100,000 total lines. The Tennessee General Assembly has since removed the authority of the TRA to govern the territories of previously-certificated telecommunications utilities, including municipal electric systems providing telecommunication services. *See* Tenn. Code Ann. § 65-5-109; *see also In Re: Application of Bristol Tennessee Essential Services for Expanded Certificate of Public Convenience and Necessity to Provide Competing Telecommunications Services Statewide*, Docket No. 12-00060, Final Order at 10 (Oct. 16, 2013) (“[a certificated municipal electric system] is no longer required to seek TRA approval to expand its territory . . . .”), *available at* <http://www.tn.gov/tra/orders/2012/1200060bh.pdf>. EPB is not affected by the territorial

also authorized, by Tenn. Code Ann. § 7-52-601, *et seq.*, to provide advanced telecommunications services and capabilities. However, because of four (4) additional words in Section 601, Tennessee municipal electric systems, including EPB, are prohibited from providing those services outside their electric service territories. EPB asks the Commission to remove the barrier created by these four (4) words – “within its service area” – that appear in Section 601. This barrier has created a wall preventing EPB from responding to regular requests that it provide advanced telecommunications services in surrounding areas to promote economic development and to provide Internet access to consumers who are still relying upon dial-up modems or other very limited Internet service options.

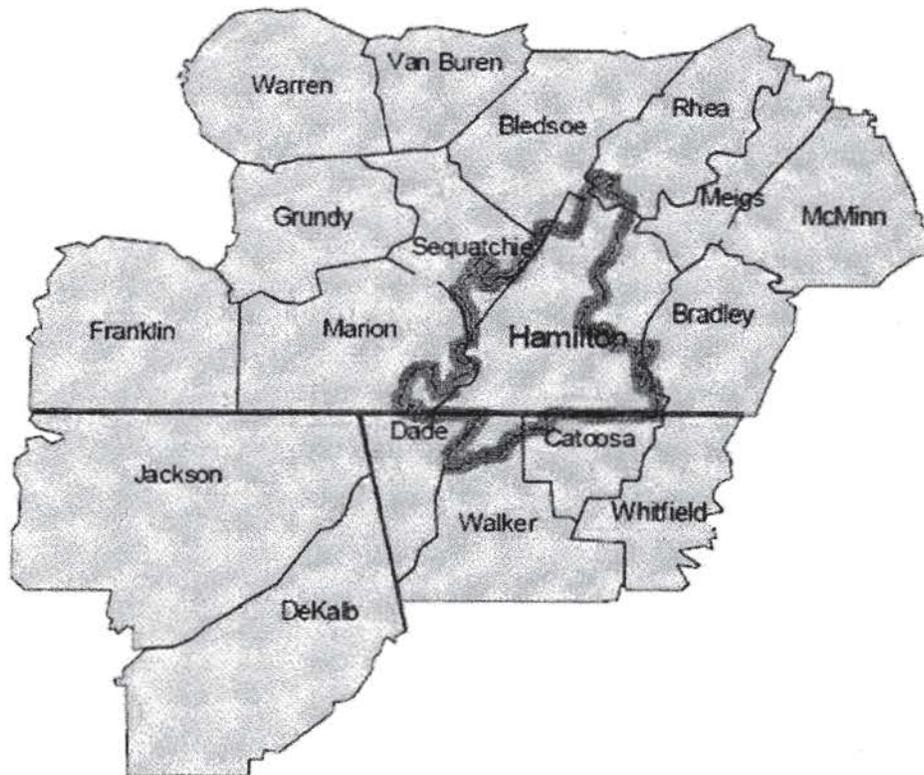
**A. EPB’s Background and History**

The Electric Power Board of Chattanooga is an independent Board of the City of Chattanooga, Tennessee, a municipal corporation. EPB is a distributor of Tennessee Valley Authority (“TVA”) power, providing electric service to more than 170,000 customers in a 600 square mile service area. EPB’s electric service area includes all of the City of Chattanooga, most of Hamilton County in which Chattanooga lies, and portions of five (5) other counties in Tennessee and three (3) counties in North Georgia. EPB’s electric service area is shown in the following map, an electronic copy of which is provided as Exhibit 2.

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restriction for existing telephone cooperatives, and is not seeking Commission action with respect to this provision.

## EPB Electric Service Territory



Chattanooga traces its modern history to 1816, when a trading post known as Ross's Landing was established at a bend in the Tennessee River, just upriver from the point at which the River winds its way through the mountains that comprise the southernmost part of the Appalachian range. Chattanooga was incorporated in 1839. By 1850, the first railroads arrived and Chattanooga became an important regional transportation center. Chattanooga's economy grew as a center of heavy manufacturing, with foundries making the implements of agriculture and commerce, using coal and iron from surrounding mountains, and moving raw materials and finished products by rail and water.

Chattanooga's heavy industry not only had profound effects upon Chattanooga's economy, it also had a profound effect upon the environment. In 1969, Walter Cronkite announced that Chattanooga had the dirtiest air of any American city. To address the nation's worst air pollution, the community chose a course of local cooperation rather than regulatory confrontation, and organized a local air pollution control bureau to find solutions – a year before EPA came into existence. Within three years, the newly formed federal agency recognized Chattanooga as a national model for dramatically improving air quality and grandfathered the city's locally-formed air pollution control bureau into the network of air control authorities that was being established across the country.

Along with many manufacturing communities, Chattanooga's economy suffered during the 1970's and 1980's. As part of a broad effort to address these ills, the community established *Chattanooga Venture*, a non-profit organization charged with "turning talk into action." Venture solicited – and received – ideas for making Chattanooga a better place by the turn of the Century. Dubbed "Vision 2000", the series of public meetings drew thousands of people who welcomed the chance to dream together about the future rather than sit alone and grouse about the past. Citizens identified 41 separate objectives, ranging from improving human rights to recruiting amateur athletics, and each objective became a to-do for some group or organization. Notable among the successful initiatives was the Tennessee River Park, featuring a river walk that stretches nearly 20 miles along the banks of the Tennessee River, and the Tennessee Aquarium, the largest fresh water aquarium in the world.

Vision 2000 was the first of a continuing series of community engagement efforts that addressed redevelopment of areas of the City, efforts to improve recreational opportunities, and improvements to local education. The formula for engagement and cooperative action became

known as “the Chattanooga Way,” and cities from all over the world sent delegations to learn how Chattanooga conducted its public process, which seeks to accomplish much through the participation of many. Beginning with EPB’s evaluation of entry into the communications business, EPB has applied the “Chattanooga Way” to its development and operation of its advanced telecommunications network and services.

**B. EPB’s Path to Gigabit Fiber**

EPB receives power from TVA at fourteen (14) delivery points and distributes it throughout its service area using a network of 119 substations and some 3,900 miles of electrical transmission and distribution lines. EPB’s substations house switching equipment and large transformers. Distribution lines radiate out from each substation to transformers that reduce voltages further to levels useful for business and residential ratepayers. Meters at each residence or business measure each customer’s use.

Traditionally, most of the elements of EPB’s electric distribution network operated independently: Breakers would open in response to a local condition and would be manually reset; problems on the system would be called in by customers or found by EPB employees dispatched to patrol lines in areas suffering an outage; most switches were operated manually; customer meters were read manually each month. Some system conditions could be remotely monitored by EPB’s system operators, but the monitoring depended upon radio systems and shared telephone lines with limited capacity and poor reliability.

By the mid-90’s, EPB recognized the need to enhance its electric system by the addition of high-capacity, dedicated communications network. In 1996, EPB’s Board adopted a resolution that set forth a series of findings concerning the need for EPB to begin developing a communications network with substantial excess capacity, so that it could meet future EPB

electric system needs and could be used to offer additional services to its customers.<sup>33</sup> The Resolution identified high-capacity fiber optic communications systems as the technology of choice for the EPB's communications infrastructure, approved an initial expenditure of \$150,000 to evaluate options for the network development, and authorized management to evaluate possible partnerships with private communications companies. On the same day, EPB's Board adopted a second resolution that authorized the expenditure of an additional \$350,000 for development of EPB's first fiber network segment, linking EPB distribution facilities in the downtown Chattanooga area.<sup>34</sup>

In September, 2009, fiber-based communications services were available to residential customers. In September, 2010, EPB became the first in the nation to offer Gigabit Internet service to all of its customers. By March, 2012, the Smart Grid was complete. Today, more than 60,000 EPB electric customers subscribe to EPB's voice, video programming, and Internet services. A detailed timeline for EPB's development and deployment of its gigabit fiber network is provided in Exhibit 5.<sup>35</sup>

### **C. Demonstrated Benefits of High Speed Internet**

#### **1. Electric System Customer Benefits**

EPB's fiber network provides very large system reliability and financial benefits to EPB's electric system customers.

The Smart Grid that the fiber network made possible was projected to reduce electric power outages by 40%. During the two years since the final intelligent switches were installed on the Smart Grid in the spring of 2014, the reduction in power outages has approached 60%. Using

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<sup>33</sup> See EPB Board Resolution 96-08 (Apr. 29, 1996), provided as Exhibit 3.

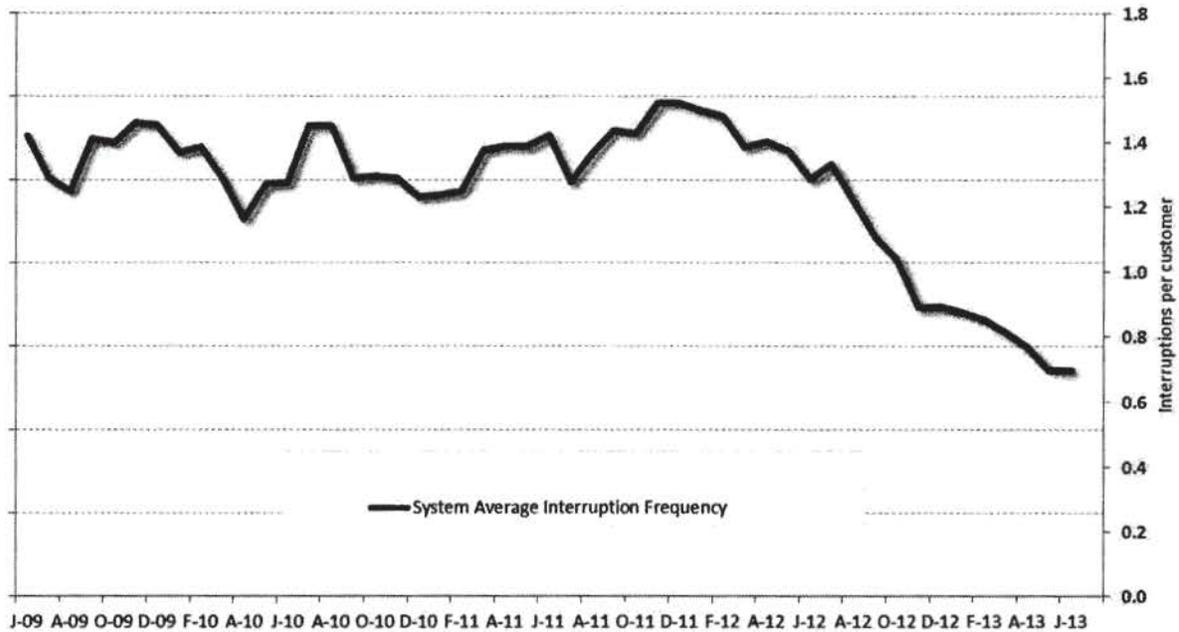
<sup>34</sup> See EPB Board Resolution 96-09 (Apr. 29, 1996), provided as Exhibit 4.

<sup>35</sup> Timeline of EPB's Development and Deployment of Gigabit Fiber Network.

analytical methods established by DOE, EPB estimates that power interruptions historically have cost its customers \$100 Million each year. Based upon this estimate, the Smart Grid is producing savings to EPB customers and to the community of nearly \$60 Million per year.



### Reduction in EPB Service Interruptions Jan 2009-Jun 2013



EPB’s Smart Grid had its first major test in July, 2012, when windstorms caused a major power interruption. Without EPB’s Smart Grid, some 77,000 homes and businesses – nearly half of EPB’s customers – would have lost power. Instead, dozens of automated switches – “IntelliRupters” – communicated with one another and isolated problems, automatically restoring power to more than 41,000 customers. The automatic restoration of power avoided 58 Million customer outage minutes and reduced restoration costs by \$1.4 Million.

With EPB’s Smart Grid in place, smaller-scale problems often result in nothing more than a flicker, as the Grid’s intelligent switches instantly reroute power around the problem. That was the case for most of the customers affected by an outage in January, 2013 caused by a large tree