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**Written Statement of Mr. Austin Carroll, General Manager of Hopkinsville Electric System in Hopkinsville, Kentucky, on behalf of the American Public Power Association To the House Energy and Commerce Committee, Subcommittee on Communications, Technology and the Internet**

*The National Broadband Plan: Deploying Quality Services in the Last Mile*

**Wednesday, April 21, 2010**

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Good morning Chairman Boucher, Ranking Member Stearns and Members of the Subcommittee. My name is Austin Carroll, and I am the General Manager of Hopkinsville Electric System in Hopkinsville, Kentucky. I am testifying today on behalf of the American Public Power Association (APPA), where I serve on the Board of Directors, and the Kentucky Municipal Utilities Association (KMUA), as well as in my position with the Hopkinsville Electric System.

APPA is the national service organization that represents the interests of more than 2,000 publicly-owned, not-for-profit electric utilities located in all states except Hawaii. Exhibit 1, below, is a map showing the locations of APPA members nationwide.

## EXHIBIT 1



Many of these utilities developed in communities that were literally “left in the dark” during the era when the United States was electrified, as private-sector electric companies pursued opportunities in larger population centers. State and local governments, therefore, undertook the effort to ensure that residents of their communities were served by their own power systems, in recognition of the fact that electrification was critical to their economic development and the educational opportunities and quality of life of their residents.

Currently, over 70 percent of APPA’s members serve communities with less than 10,000 residents, and approximately 45 million Americans receive their electricity from public power systems operated by municipalities, counties, joint powers authorities, states, or public utility districts. Many of these public power systems were established primarily because private

utilities were unwilling to serve smaller communities and rural areas, which were then viewed as unprofitable. In these cases, communities formed public power systems to do for themselves what the private sector was either unable or unwilling to do.

This same trend is occurring today in the area of broadband and other advanced communications services. Many public power systems are meeting the new Information Age demands of their communities by providing broadband services where such services are unavailable, inadequate, or too expensive. These services, provided with high quality and at affordable prices, are crucial to the economic success and quality of life of communities across the nation.

Nationwide, 700 public power utilities provide broadband services to school districts, local governments, and hospitals, and almost 200 provide Internet services to their residents. Municipal utilities are non-profit and do not provide dividends for stockholders. In Kentucky, they pay wages that are comparable to those provided to state government employees. Many public power utilities have secured loans or utilized municipal bonds to invest in the infrastructure needed for broadband. Municipal utilities are locally owned and operated utilities that are governed by elected municipal councils or independent utility boards appointed by elected mayors. Thus, unlike large private-sector broadband providers, municipals' sole focus is the needs of their own small territories, and they are responsive to their residents through the electoral process.

It is not my purpose to criticize private sector telephone and cable companies' broadband investment, deployment and pricing decisions, but rather to illustrate the differences between

these companies and municipal/public power utilities that deploy broadband services. Private sector companies must answer to shareholders and to Wall Street. Their decisions must of necessity be based on what maximizes their overall nationwide return. Municipal utilities, in contrast, answer to their local residents. And that is why I believe that, for our nation's smaller communities and rural areas served by public power, municipal broadband should be such an important element of our nation's broadband plan.

This testimony will focus on broadband services provided by Kentucky municipal utilities, which I think will provide a particularly useful example of the important role public power utilities have to play in making broadband available to our nation's unserved and underserved areas.

I would like to begin by letting you know about the positive economic development impact that Kentucky's municipal utilities have made in their communities by providing broadband to the residents and businesses in their areas. Businesses and jobs go to those communities where businesses can obtain low-cost, reliable and state-of-the-art broadband services. If a business cannot get those services in a particular community, it will go somewhere else.

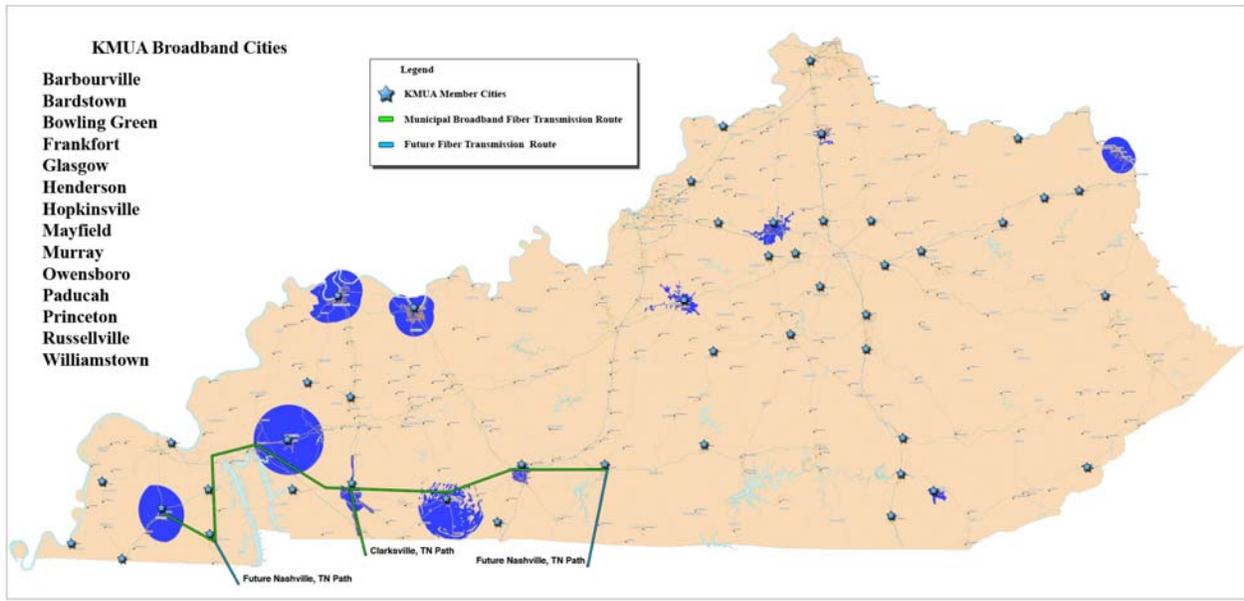
In a largely rural state like ours, we have to be innovative to encourage Kentucky entrepreneurs and public entities to provide advanced communications services that will make us competitive with larger metropolitan areas. But we face even broader competition than that. Like our nation

as a whole, Kentucky is competing with other countries – where broadband deployment and adoption far surpass what we have accomplished in the U.S. Internationally, European and Asian nations are outpacing the United States in developing the availability, usage and speed of Internet services.

Kentucky municipal utilities recognize that reality and, on behalf of the residents and businesses they serve, have responded. Kentucky is the nation’s leader in municipal utility provision of broadband and other communications services. The small town of Glasgow, Kentucky, is recognized nationally as a pioneer in providing municipally owned advanced telecommunications and was the *first* to do so in the United States. Even large cities like Seattle, Washington, have contacted Glasgow for information on the municipal model for broadband communications services.

*Thirteen* municipal systems (six cable and seven wireless) provide broadband in Kentucky: Barbourville, Bardstown, Bowling Green, Frankfort, Glasgow, Henderson, Hopkinsville, Mayfield, Murray, Owensboro, Paducah, Princeton, and Williamstown. Exhibit 2, below, is a map showing where municipal utility broadband service areas are in Kentucky.

## **EXHIBIT 2**



Although it is not reflected on this map, I want to point out that Williamstown has installed wireless equipment to serve all of Grant County. The County requested that the Williamstown Municipal Utility provide this service to the rural areas of Grant County because of a lack of response from the large private telecommunications companies.

The 13 Kentucky municipal utilities that shown on the map provide broadband services to almost 57,000 customers across the Commonwealth. And the numbers are growing every day.

*Municipal Utilities Respond to their Communities' Broadband Needs.*

Outside of the major metropolitan areas of Louisville, Lexington, and greater Cincinnati, Kentucky is composed of smaller cities and towns and rural areas. As a result, private providers have been slow to deploy broadband in those areas. The customer base, and housing density, is not there to entice the large privately-owned companies to come to invest in infrastructure in many smaller communities. There are just too many more lucrative opportunities for large

private providers in major metropolitan areas, and thus that is where they choose to make the bulk of their broadband infrastructure investment.

Outside of Louisville, Lexington and the greater Cincinnati area, commercial grade broadband connectivity is not available to many of the rest of us in Kentucky. As a result, smaller markets – Henderson, Frankfort, Owensboro, Barbourville, Paducah, Bowling Green, Russellville, Hopkinsville, Murray, Glasgow, and others – have to engage in “self-help.” Those communities look to their municipal utilities to provide them with the same level of broadband connectivity as the Atlanta, Nashville and St. Louis markets.

Let me provide you with a few examples of municipal broadband success stories in Kentucky.

*Hopkinsville, Kentucky.*

In May of 1998, our Hopkinsville Electric System (HES) Board of Directors agreed to run fiber optic cable to HES substations to implement automated substation monitoring as an electric outage prevention measure. By March of 1999, we had connected our substations and ringed our City with fiber optic infrastructure and it was lit for the first time. Exhibit 3, below, is a picture of HES and some of its staff.

**EXHIBIT 3**



At that time, broadband service was not available in Hopkinsville. Recognizing the need for our community to participate in the global economy and have available all educational opportunities, HES elected to use our fiber infrastructure to provide broadband as a service to local businesses, industries, governmental entities and others needing high-speed data communications. An HES subsidiary, EnergyNet, was created to manage the telecommunication and broadband side of HES operations. Bandwidth at reasonable rates quickly became a popular commodity in our community.

Kentucky Derby Hosiery, an international sock company, was our first customer. After that, all city buildings -- including the emergency operations center, fire stations and police stations -- were connected. All schools were connected as well, and by becoming a USAC-approved provider of E-Rate services, we were able to reimburse the school system 80% of its costs for

connectivity. Most major businesses in town are now connected over our fiber optic network and purchase our Internet service.

In late 2006, the HES board made the decision to provide the residents of Hopkinsville with locally-owned, reliable, affordable broadband Internet service. This was accomplished by deploying a wireless “mesh” broadband network throughout Hopkinsville using our fiber for backhaul. In addition to providing Hopkinsville residents with broadband Internet service, the network would later be used to read our smart meters remotely, using the latest automated meter reading technology. Also, the wireless network provides the Internet connections for over seventy city police and other emergency vehicles.

Thus, our last-mile broadband service in Hopkinsville is provided through a combination of fiber optic and wireless transmission. In the end, it is my opinion that this combination is probably the most effective broadband delivery mechanism for rural America’s last mile.

As EnergyNet continued to grow and add both residential and commercial customers, HES management realized the need to deepen the level of support and security provided for critical services of our business and public sector customers. In November of 2006 the decision was made to build a new network operations center. Exhibits 4 and 5, below, are pictures of the exterior and interior of the HES network operations center.

**EXHIBIT 4**



**EXHIBIT 5**



This new, hardened facility, completed in 2008, was designed from the ground up to be state-of-the-art and to provide EnergyNet and its customers with a secure, stable environment in which to house critical network operations equipment as well as customer equipment and data. We now host server equipment for local businesses, the hospital, and other anchor institutions and provide points of presence for three long distance companies.

Before we had a long distance carrier point of presence (POP) in our community, we were severely handicapped in our ability to buy wholesale bandwidth at the reasonable prices that were available in larger cities. So, in 2008, our Board, with a lot of community support, committed to constructing a fiber optic transmission line to the Qwest Communications POP in Bowling Green, Kentucky, seventy miles to our east. This line was constructed as a fiber optic ground wire that rides on the top of the Tennessee Valley Authority (TVA) steel tower electric

transmission line between Hopkinsville and Bowling Green. Exhibit 6, below, is a helicopter and crewman attaching the fiber optic ground wire to the TVA steel tower electric transmission line.

#### **EXHIBIT 6**



The ability to purchase wholesale bandwidth directly from Qwest Communications reduced our bandwidth cost from \$125 per megabit to \$20 per megabit – an 84% reduction. We pass these savings along to our customers, along with the strong reliability of a steel-tower-built line. Not only do we use this line to purchase our bandwidth needs; it is also used to supply the bandwidth needs of our local private cable TV company, New Wave Communications. Plans are underway to connect the line to Russellville and Elkton, Kentucky, to our east.

In addition, HES leases a secondary line from AT&T that links us to Nashville, Tennessee, where we purchase wholesale bandwidth from Level 3 Communications. This provides us with a secondary backbone connection for security and reliability. This second leased line is also used to share reasonably priced wholesale bandwidth with Clarksville, Tennessee, another municipal electric system 20 miles to our south.

During the 2009 ice storm in Kentucky, the worst natural disaster in our state's history, Hopkinsville suffered significant damage. Even though approximately 30% of our electric customers were without power, whole cities were blacked out to the north and west of us. We are proud that our broadband system, early in the disaster, was practically the only communications system that stayed up and working and was a very valuable emergency tool in the recovery efforts.

Through the efforts and foresight of dedicated HES Board members and staff over the last 12 years, today our small town is on the national map of "connected cities." Today, we can offer the same amount of bandwidth at prices that match those of major cities. Infact, we have an industrial site that is in the running for identification by the Deloitte Company and TVA as a pre-certified data center site. This means we have the connectivity, electric power, available land and location to attract a major data center such as Google, Peak10, Microsoft, and the Department of Defense, among others which could bring good-paying, new economy jobs to our community. Thus, we are not only providing a tool for our existing businesses and citizens, but an economic development tool for our community to bring in new businesses.

Although we are proud of our “connecting-our-community/last-mile history,” our story is not unique. Other municipal electric systems in Kentucky have similar stories, and so do other municipals around the country.

In Kentucky, the nearby cities of Murray, Mayfield, Paducah, Princeton, Russellville, Bowling Green, and Glasgow are working with us in connecting transmission fiber and network operations centers into a regional network to provide greater security, redundancy, efficiency and marketing capability. Our vision is to eventually connect all the municipal broadband utilities in Kentucky for the benefit of our customers and citizens of our Commonwealth.

Locally, our work is not done, however. We are branching out to the more rural areas of our county with our wireless network as we develop the cash flow to do so. Neighboring Todd County has also asked our assistance to bring broadband to their community. There, the school system received a grant to give each high school student a laptop, but they do not have a broadband service to connect them to. Also, our City does the emergency dispatching for Todd County, and they need a high speed connection to their police department. Thus, we are planning a fiber route through Elkton, the county seat, to help them get started.

But “just like a turtle you find sitting on a fence post, you know he didn't get there by himself.” So it is with us. We have been successful due in no small part to the help of our business partners and associates. We owe a debt of gratitude to Qwest Communications, AT&T, Level 3, the Tennessee Valley Authority, New Wave Communications, Cinergy Communications and certainly our fellow KMUA/APPA members.

*Frankfort.*

When the incumbent telephone and cable companies in Frankfort would not expand their networks in Frankfort to provide Internet service outside of the downtown area, the Frankfort Plant Board decided to provide broadband, because the citizens wanted it, demanded it and needed it. Much better than the state or national average, a full 55% of households in Frankfort now have Internet service provided by the municipal utility. This is what economic development officer, Phil Kerrick, has to say about the impact that Frankfort Plant Board's broadband has had on economic development: "Frankfort has long been on the cutting edge of communications technology. Cable television came to Frankfort in the early 1950s, nearly a quarter century before most other communities. The Frankfort Plant Board, a municipal utility provider of water, electricity and telecommunications services, was first to bring cable television to Frankfort and is now providing the same telecommunications technology in broadband as the national companies at competitive rates. This makes us very attractive as a place to come and do business for prospective businesses and industries."

*Barbourville.*

Barbourville purchased the existing cable television system in August of 1996. At that time, there was no Internet available anywhere in the county. Barbourville's utility began offering dial-up Internet service in the summer of 1997 by partnering with Union College. Barbourville utility started offering broadband cable modems in the early spring of 1998, becoming one of the first places in Kentucky to offer the service. In January of 2000, Barbourville was named one of the "Most Wired Cities in America" by Yahoo Internet Life magazine. There were eight cities profiled, and Barbourville was by far the smallest. In October of 1999, Barbourville's broadband system helped the city recruit DataTrac. Barbourville was chosen over several other cities, including Houston, Texas. DataTrac does contract call center work for the federal government. Initially, DataTrac provided call support for the Immigration and Naturalization Service, but it is currently providing services for the Federal Bureau of Investigation.

Barbourville's utility provides fiber-optic connections for nine out of the eleven of the county schools. Other local businesses have connections and services that they could not otherwise get if it were not for the Barbourville utility's broadband network.

Since 1998, Barbourville's utility has not increased its price for broadband. In fact, the utility has reduced its prices on broadband while providing faster speeds. In a county where nearly half of the population does not have a high school diploma, Barbourville's utility provides broadband services to approximately forty percent (40%) of the customers that subscribe to its cable television service.

*Bowling Green Municipal Utilities (BGMU).*

BGMU purposely invested in a full and complete fiber loop around and through Bowling Green. BGMU's commercial customers enjoy the benefits of stable, reliable and robust fiber connections, with local service personnel they know and can call. Western Kentucky University connects its outlying campuses together by leasing dark fiber from BGMU. The City of Bowling Green has implemented for its own public safety needs (police and fire) a wi-fi system with rich and complete backhaul provided through BGMU fiber. BGMU's system fulfills a role to make Bowling Green viable and economically competitive.

Buddy Steen, Executive Director of the Innovation and Commercialization Center, and the Center for Research and Development at Western Kentucky, had this to say about the BGMU fiber network: "BGMU continues to be critical for us to develop the Business Accelerator program at the Western Kentucky University Center for Research and Development. When BGMU fiber was installed at our facility, it was like transitioning from a 'ghost town' to a 'metro downtown.' This place lit up like a Christmas tree. Since the BGMU fiber installation, one of our Accelerator Program tenants grew from two to nearly 50 employees because of the difference it made in their business. They even moved their Computer Data Center from a network operations center in California to their offices here in Bowling Green."

*Murray Electric System.*

Murray Electric System entered the broadband telecommunications business in Murray early in 2000. As it became obvious that advanced telecommunications services, specifically high-speed Internet service, were becoming a necessity for business and industry, and a prized infrastructure

for recruiting new business and industry, Murray's Mayor and council encouraged the City-owned Electric System to investigate venturing into broadband services.

A feasibility study was commissioned, which included institutional interviews with City and County government, the local hospital, large industrial customers, and Murray State University. The overwhelming consensus was that yes, Murray Electric System should step in and build and provide broadband infrastructure to the community. At that point in time, no private provider was delivering these services, nor had they announced any intention to do so.

Today, Murray Electric System provides cable television service, which includes digital and high-definition capabilities, to over 3,500 homes. This is well over 50% of the homes that the utility passes with its cable plant. In addition, the utility provides high-speed Internet services to over 2,700 homes and businesses. A private cable operator also offers these same services, although ownership of this company has changed hands three times since Murray Electric System entered the marketplace. The average cable subscriber in Murray saves an average of \$20 per month compared to those who live in towns without competition.

Murray's broadband infrastructure was built with funds from revenue bonds issued in the amount of \$13.75 million. Those bonds are being serviced with the revenues produced by the sale of cable and broadband services. There is not, nor has there ever been, any subsidization from tax revenues, nor did electric sales revenue intermingle with the utility's broadband operation.

In 2005, in partnership with the Murray-Calloway Economic Development Corporation, high-capacity fiber optic cable was extended into the Industrial Park situated on the north side of Murray. Services derived from the fiber were a definite benefit in attracting the new Webasto plant to Murray. According to Mark Manning, the EDC President, these services are as vital to economic development as water, sewer, and electricity.

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There are many other municipal broadband success stories to be told. My basic point is this: The nation's municipal utilities have been on the forefront in bringing broadband to the homes and businesses of our nation's smaller communities and rural areas. We hope that Congress will continue to recognize and support those efforts.

Thank you for allowing me to testify here today. I look forward to your questions.