March 7, 2014

Federal Communications Commission
Attn: Rural Broadband Experiments Program
445 12th Street SW
Washington, DC 20554

Via: Electronic Comment Filing System

Re: Expression of Interest for Participation in Rural Broadband Experiment
WC Docket No. 10-90

To whom it may concern:

This letter is an expression of interest in the Federal Communications Commission’s proposed “Rural Broadband Experiments” program, as outlined in the FCC Technology Transitions Order dated January 31, 2014. The Union County Chamber of Commerce (“Chamber”) understands that this expression of interest, including specific projects and estimated costs, is non-binding and that formal applications for funding will be due after the FCC establishes final rules for the program.

Background

The Chamber is a not-for-profit organization dedicated to economic development and improving the quality of life in Union County, Tennessee. The Chamber represents businesses, government organizations, and other community entities with a common interest in the betterment of the County.

Union County is a predominately rural area in East Tennessee with a population of approximately 19,100. Median household income is $35,535. Persons below the poverty rate account for 21.8% of residents, including 25.4% of the children. Although the County is included within the Knoxville Metropolitan Statistical Area, it accounts for only 0.7% of the total jobs in the region. The County includes three municipalities (the largest of which has a population of approximately 2,400 people) and one unincorporated town. Thus most residents are sparsely spread throughout the County (population density of 77 per square mile).

The County has no competitive providers for phone service and yet, due to geographic challenges is served by three distinct phone utilities of which two are designated as “rural
protected.” As a result, Union County suffers from a broadband infrastructure that is a patchwork of traditional phone lines, cable and wireless technologies focused on the more dense population centers. The hilly terrain severely limits the effectiveness of wireless technologies.

The lack of essential communication services adversely affects economic and social development desperately needed in Union County.

- In a recent program sponsored by East Tennessee Economic Development Agency, site surveyors rated Union County as having less than 1 requirement for industry development.
- Our geographic location has no major brick and mortar interstate within its borders, but we have an influx of intellectual capital that is stymied by the lack of an information highway to conduct business.
- Our schools are moving to paperless classrooms, but there are students disadvantaged by a lack of internet capability at home or other access on evenings and weekends.
- Our County library has wonderful online programming that would advance the development of our workforce and could improve our educational markers such as ACT scores and GED attainment, but lack of broadband means that these services are only available if you can physically get to the library. Only 56% of our adult population has a high school diploma or GED.
- Our post-secondary students could make more use of distance learning, but not if students can’t connect to the internet.
- Union County is host to the first high school Virtual (on-line) Academy in the State of Tennessee and many of our own population are unable to attend due to lack of broadband access.
- A majority of students in Union County are part of the free and reduced lunch program and due to their qualifying status in this program are also qualified to participate in the reduced cost broadband service offered by Comcast but due to limited availability of broadband service cannot participate in the offered program. 2254 out of 2874 students receive free and reduced lunch in Union County.

These factors underscore the disadvantages Union County faces in terms of economic growth and quality of life. There is no competition for broadband service within the rural geographic areas, so services and costs are driven solely by demand and return on investment for the service providers. If there are not enough subscribers, there is insufficient ROI and therefore no service.

**Proposed Service Areas**

In October 2008 and again in 2012, the Chamber conducted a survey of Union County broadband coverage in partnership with ConnectedTN. The Chamber believes that certain information subsequently reported to ConnectedTN by broadband service providers is inaccurate. Areas indicated to have coverage in fact are not covered. Service in other areas is significantly slower than indicated by service providers,
frequently less than 3 Mbps and less than 1 Mbps in some areas. The map shown below illustrates the fact that problem areas exist throughout the County. The large concentration is located in the Sharps Chapel area of the County.

**Broadband Inquiries in Union County**

![Map of Union County showing broadband service](image)

**Source: ConnectedTN**

For purposes of this expression of interest, the Chamber identified three areas within Union County that currently lack broadband service altogether. In most instances, these are just beyond areas that do have broadband access. However, the current service providers consider the unserved areas to be uneconomic and we understand they have rejected requests to extend service under current circumstances.

**Summary of Unserved Areas in Union County**

<table>
<thead>
<tr>
<th>Areas in Union County Without Broadband Service</th>
<th>Approximate Number of Affected Homes</th>
<th>Census Block</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sharps Chapel “Rush Strong” Area</td>
<td>75</td>
<td>040300-1</td>
</tr>
<tr>
<td>2. Hickory Valley/Hickory Star Area</td>
<td>50</td>
<td>040202-2</td>
</tr>
<tr>
<td>3. Walkers Ford Area*</td>
<td>160</td>
<td>040100-1</td>
</tr>
<tr>
<td><strong>Total Homes Affected</strong></td>
<td><strong>285</strong></td>
<td></td>
</tr>
</tbody>
</table>

* Includes 13 homes in adjacent Grainger County with access from Union County only.

The Chamber suggests that all these areas be included in the FCC’s proposed Rural Broadband Experiments program. We will continue to assess the quality of broadband service within the County and may revise the proposed areas in the formal request for funding.
Broadband Technologies

The Chamber anticipates that the final solutions to the identified unserved areas may consist of phone line (DSL), cable, fiber optics and wireless technologies. For example, in some cases fiber optic lines are already installed in the areas, but necessary signal equipment is not installed. At least one property owner is prepared to provide a site for a tower that could be used for wireless solutions in the Hickory Valley/Hickory Star area that would likely also address some problems in other areas across Norris Lake in the Sharps area. Similarly, we have identified a water tower that might be used as an alternative to host wireless equipment at a lower cost. Our goal is to implement robust, scalable technologies that can serve growth in the affected areas.

The Chamber has not conducted engineering studies of the most cost effective solutions. We have contacted service providers currently operating in the County and fully anticipate the active participation of one or more of these organizations.

We contemplate conducting a survey of vertical assets in the County (such as water towers) to encourage cost effective wireless solutions. Wireless may be particularly attractive in areas adjacent to a large lake partially located in the County (Norris Lake) where wireless service would facilitate tourism and safe water sports.

Contemplated Service Offerings

The Chamber anticipates broadband speeds of 1 MBPS or greater in the currently unserved areas. The speed will be dependent on the selected solutions with appropriate consideration of the trade-offs between quality and cost. We would encourage technologies that could be upgraded to better quality at a later date if needed.

Anticipated Governmental Participation

The Chamber anticipates the active participation of the State of Tennessee and Union County. For example, ConnectedTN assisted in the assessment of broadband coverage in Union County and provided certain information in support of this letter. We have also discussed the broadband needs with the County and fully expect their support as needed. Governmental participation will be more specifically defined in our formal funding request.

Estimated Funding

At this point, the Chamber anticipates requesting one-time funding for installation of infrastructure necessary to extend service to the identified areas. The amount will depend on more detailed analysis of the possible solutions and what level of funding, if any, the service providers will provide for this effort. Our preliminary high-level estimate is that elimination of all unserved pockets may require funding of $1.0 to $1.7 million. Major components of this estimated cost are:
- **Multiplexers**: Approximately 8 - 10 required at $50,000 each.
- **Cell Tower**: One anticipated at a cost of $400,000 to $1 million depending on whether an existing water tower can be used or a new tower must be constructed.
- **Fiber/cable extensions**: Rough estimate of 10 miles required in total at a cost of $25,000 per mile.

Our formal request will incorporate more accurate cost estimates based on discussions with one or more Eligible Telecommunications Carrier who will participate with the Chamber in this program.

The point of contact for the Chamber is:

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The Chamber, on behalf of all residents and businesses of Union County, appreciates the opportunity established by the FCC to solve critical broadband deficiencies in rural areas. We believe that resolution of the problem areas identified in this letter will materially improve education, economic development, safety and general quality of life for the affected residents. We look forward to reviewing proposed rules and preparing to submit our formal request for funding later this year.

Sincerely,

Union County Chamber of Commerce

Patrick S. Hurley  
President