

ctc technology & energy

engineering & business consulting

April 1, 2016

Ms. Aldona Valicenti, Chief Information Officer
Mr. Scott Shapiro, Chief Innovation Officer
City of Lexington / Lexington-Fayette Urban County Government
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Subject: Proposal to develop strategic analysis of broadband opportunities

Dear Aldona and Scott:

CTC Technology and Energy is pleased to provide this proposal to develop a strategic analysis of broadband opportunities in the areas of Fayette County outside the urban service area. The purpose of this study will be to develop a pragmatic strategy for meeting the needs of the County's businesses and residents with respect to world-class broadband services.

As you requested, we propose to perform the following tasks:

1. Develop high-level design and cost estimate
2. Develop a candidate public-private partnership strategy
3. Facilitate stakeholder discussions (needs assessment)
4. Develop a financial model
5. Provide strategic recommendations

Scope of Work

Task 1 - Develop high-level design and cost estimate

We will develop a high-level design and cost estimate for fiber construction to:

- (1) Create a backbone that could serve as a catalyst for future last-mile deployment while reaching 150 to 200 of the County's key economic development targets—such as community anchor institutions, larger businesses, and businesses central to the County's equine industry—in “horse country” and the non-urban areas of the County.
- (2) Pass all addresses in the target service area

Columbia Telecommunications Corporation

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The two cost estimates will enable the LFUCG to understand the likely costs entailed in building this critical infrastructure, regardless of whether the construction is completed by the LFUCG (such that the fiber can then be leased to a private Internet service provider) or whether construction is done by a private investor under an alternative partnership arrangement with the LFUCG.

CTC engineers will conduct an engineering analysis to determine how the LFUCG's existing assets could be used to support this network implementation. To survey candidate fiber routes and develop cost estimates, and to identify efficient and effective way to connect the LFUCG's existing infrastructure to these new routes, a CTC engineer will perform onsite inspections of candidate fiber routing, including examination of existing conduit and fiber resources.

We will identify routing for potential fiber topologies, and will consider construction and design practices to minimize overall cost, including planning construction in conjunction with capital improvements in the rights-of-way (e.g., road work, sidewalk replacement programs).

We will also be seeking to identify areas where relatively small investments in conduit or fiber extensions might add significant value to the LFUCG's infrastructure in terms of economic and community development goals. (We performed a high-level analysis of this type for Arlington County, Virginia to support the jurisdiction's strategic planning for its ConnectArlington network.)

Based on that analysis, we will develop a high-level estimate of likely costs and timelines for construction and implementation of a baseline set of fiber routes. We will identify incremental costs for enhancing construction methodology to include additional conduit capacity and access points to facilitate reduced-cost construction for potential future expansion and site additions. We will seek to identify areas of risk.

Our network design and cost estimates will assume a phased approach to network deployment. To be clear, we will not be providing a blueprint-level network design or cost estimate. Rather, we will be providing an analysis of existing infrastructure, a conceptual design, high-level maps, and a system-level overview of the potential infrastructure—which in turn will become a roadmap for financial analysis and business modeling, and for future decisions (potentially including detailed engineering).

Task 2 - Develop a candidate public-private partnership strategy

Drawing on our experience developing public-private partnerships for local governments (including the cities of Santa Cruz, California; Urbana and Champaign, Illinois; Madison, Wisconsin; Bloomington, Indiana; and Boulder, Colorado) and our thought leadership in this fast-

changing field,¹ we will develop a recommended public–private partnership strategy for the LFUCG.

At a high level, we will consider issues related to risk, benefits, and control. We will focus on determining what role the Unified Government would play and what role the private sector would play in addressing broadband needs in the LFUCG.

We will talk to at least a half dozen potential private partners that may be interested in such an opportunity, to gauge their interest and understand their potential partnership parameters.

We will look at a range of different models including the models currently contemplated for within the urban service area, and other models targeted toward reaching key businesses and stakeholders outside the urban service areas.

Task 3 – Facilitate stakeholder discussions (needs assessment)

The LFUCG’s broadband user groups and stakeholders include the public sector (the Unified Government itself, public safety agencies, other regional government agencies, and educational institutions), business customers, citizens, and broadband service providers. These stakeholder groups have different current broadband needs, and will have unique future demands.

To assess the current and long-term broadband needs of the LFUCG’s stakeholders, we will facilitate five meetings or focus groups with civic leaders, economic organizations, and local businesses outside the urban service area.

We will prepare appropriate questions for each interview subject with a goal of understanding their fiber needs, as well as constraints and challenges. We will draw, too, on our knowledge of the region, developed in our previous engagements with the LFUCG. We will take detailed notes on the discussions, and will use the insights we develop to inform subsequent project tasks— including helping us to understand the size and potential of the broadband market in horse country and other non-urban areas of Fayette County.

We anticipate conducting the in-person interviews over a period of a few days in Lexington. For all of these meetings, we request the LFUCG’s assistance in identifying the participants, scheduling and confirming the focus groups, and arranging a suitable meeting place.

Task 4 – Develop a financial model

As we have done for community broadband strategic planning projects nationwide, we will develop a financial model for the potential broadband network outside the urban service area

¹ CTC President Joanne Hovis recently authored “The Emerging World of Broadband Public–Private Partnerships: A Business Strategy and Legal Guide”—a seminal work published by the Benton Foundation (<https://www.benton.org/sites/default/files/partnerships.pdf>).

based on the system-level design and cost estimates. Our goal will be to help the LFUCG understand, based on the recommended public–private partnership developed in Task 2, the full financial implications of the model, including financing costs (if necessary), operations and maintenance costs, and the revenues necessary to cover those costs.

This high-level financial model will outline operational attributes and processes including policies, staffing levels, maintenance agreements, and other considerations. Particular attention will be paid to back-office and other operating requirements, as well as working capital projections.

The model will include an overall analysis of viable potential services and will provide:

- Sensitivities of key assumptions including, but not limited to:
 - Customer segmentation
 - Market penetration
 - Pricing
 - Tiered revenue structures
 - Operating fees
 - System construction
 - Staffing levels
- Base, best, and worst-case analysis

The pro forma will follow accounting standards and will provide schedules that detail:

- Operating income and cash flow
- Net present value analysis
- Subscriber revenue by service
- Subscriber revenue by customer/customer class
- Debt service analysis
- Reserve fund requirements
- Uses and sources of funds
- Operating expenses
- Operational savings
- Depreciation summary
- Projected construction costs for network, hardware, buildings and other equipment
- Return on investment (ROI)

All of our assumptions and price sensitivities will be clearly stated and justified.

Task 5 – Provide strategic recommendations

Our final deliverable will be a report that recommends a strategic roadmap of actions for the LFUCG’s consideration. The report will include all of the data, insights, and recommendations developed in the previous tasks.

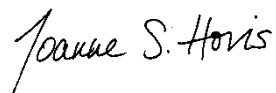
We will provide the LFUCG with an electronic draft of our report, which will include a concise narrative supported by tables, graphics, and maps as appropriate. We will incorporate feedback from reviewers and deliver an electronic version of the final report.

Cost

CTC proposes to perform the tasks described above for a not-to-exceed cost of \$58,000.

Please do not hesitate to contact me if I can answer any questions about our proposal. We look forward to supporting you on this important project.

Best Regards,

A handwritten signature in black ink that reads "Joanne S. Hovis". The signature is written in a cursive, flowing style.

Joanne S. Hovis | President