



March 12, 2014

Diane Stoddard  
Assistant City Manager  
City of Lawrence  
6 E 6th Street  
Lawrence, KS 66044

Re: Possible Partnership for Deployment of FTTH  
RFI 1400

Dear Ms. Stoddard:

Free State Broadband is pleased to submit this expression of interest in the possible partnership for private deployment of FTTH for Lawrence residents and businesses. We are excited about the opportunity this FTTH project presents to establish a vibrant 21st century ecosystem for Lawrence, KS.

### **Background**

Our cofounders have built a successful cloud software development company in Baldwin City called Reflective Group. High tech jobs were created and highly skilled talent began to commute to Baldwin City. Reuters broke the story on April 27, 2013<sup>1</sup>. The story went viral and was syndicated by several news agencies across the globe including the front page of Yahoo News! There was enough demand to continue growing the business, but there wasn't enough broadband<sup>2</sup>. Mike Bosch, one of the cofounders says, "If you think of us as a digital manufacturer, our competitors have eight-lane highway to ship their products. We have a goat trail."

The owners were forced with a choice: give up on their dreams and stay small, or give up on their hometown and move. Instead, these entrepreneurs chose to create Free State Broadband to build the 21st century infrastructure they needed to compete in a global digital economy.

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<sup>1</sup> <http://www.reuters.com/article/2013/04/27/us-usa-rural-young-idUSBRE93Q0AV20130427>

<sup>2</sup> <http://signal.baldwincity.com/news/2013/jun/19/growing-tech-company-finds-need-talent-baldwin-cit/>

## Summary

At the request of many Lawrencians, both residents and businesses, Free State Broadband is evaluating expansion into the Lawrence market. Free State Broadband’s entrance into the Lawrence market would introduce ultra-high speed internet services and naturally stimulate a competitive response from existing incumbent providers much like Google Fiber has stimulated competitive responses from other internet service providers (ISPs).

Free State Broadband was created because the cofounders experienced firsthand the “broadband ceiling” that limited the growth of their business and therefore limited the economic development of the local community. This firsthand experience puts us in direct alignment with the City of Lawrence’s core policy goals as indicated in this RFI.

The partnership would not be outside the normal expectations of any broadband utility and new business coming to Lawrence. More details are provided in the appropriate sections below.

## Services

Free State Broadband will initially offer internet, phone, and TV to both businesses and residents.

We are actively conducting market validation studies to determine how to localize our planned offering to best suit Lawrencians. **Please keep in mind these details are not finalized as the market validation studies are ongoing.**

	Standard*	Guaranteed*
<b>Internet Service Description</b>	Fast, reliable internet connection	Internet is critical to organization’s operations
<b>Target Customer</b>	Residential & Small Businesses	Enterprise Business
<b>Internet Architecture</b>	Asymmetrical, GPON	Symmetrical, Active Ethernet
<b>Internet - Upload Speed</b>	up to 500 Mbps	Determined by Customer Contract
<b>Internet - Download Speed</b>	up to 1 Gbps	Determined by Customer Contract
<b>Internet Perk</b>	Watch Netflix in Super HD	Guaranteed Uptime
<b>TV Service Description</b>	Choose a TV package to match your interests and budget: Locals	Choose a TV package to match your interests and

	Prime, or Complete. Channel Lineup is being finalized.	budget: Locals, Prime, or Complete. Channel Lineup is being finalized.
<b>TV Architecture</b>	Over-the-Top (Requires Internet)	Over-the-Top (Requires Internet)
<b>Phone Service Description</b>	Keep your number. Unlimited local, long distance, and international calls to 81 countries	Determined by Customer environment. Ranges from wholesale rates only to fully managed phone service.
<b>Phone Architecture</b>	Interconnected VoIP	Interconnected VoIP

\*Details are not finalized for the Lawrence market. These details are provided for illustrative purposes only.

**Experience**

Free State Broadband is a new internet service provider. However, our team’s experience, comprised mainly of the executive team from Reflective Group and K&W Underground, is not new to the industry. Our key team members include Mike Bosch, Casey Morford, Josh Strohm, and Rex Schick.

Network Operations Experience

A Network Operations Center (NOC) is where we manage complex networking environments. Morford and Strohm have a combined 17 years of experience managing complex networking environments. A key component of the NOC is routing internet traffic and protecting the network from increasing cyber-security attacks. With this knowledge and experience, Reflective Group was able to own and operate its own data center operations since it’s inception in 2011 giving it a strong competitive advantage. Since then Reflective Group’s data center operations have doubled in size. Examples of other networks that were managed by this team include the State of Kansas, Relevant Media Group, and Epiq Systems.

Network Design, Installation, and Maintenance

Network Design is conducted by a subcontractor with 61 years experience in professional engineering, surveying, mapping, environment, and right-of-way services. Once the design is completed, installation and maintenance are tasked to K&W Underground and other subcontractors. Schick, President of K&W Underground, has 38 years experience of installing distribution networks throughout the Kansas City region, including 4 years specifically with the City of Lawrence. The City of Lawrence has contracted K&W Underground to build, install, and repair existing fiber optic lines. K&W has been recognized countless times for their service

quality and industry innovations. Schick currently serves on the board of Kansas One Call System.

### VoIP Telephony

Legacy phone systems are too expensive, but most digital phone systems suffer from poor call quality. Morford built a new digital phone system from the ground up based on better audio compression technology. The end result is lower phone costs and better voice quality. This phone system is in use across Kansas and is registered with the FCC and the State of Kansas.

### Partnerships

Our team believes in partnerships that allow us to focus on our strengths and capitalize on the strengths of the partners to create value for the end customer. We have partnered with municipalities including Johnson County, Lenexa, Olathe, Overland Park, Lawrence, and Baldwin City. Additionally, we have partnered with transport providers, who offer dark fiber leasing, such as AT&T, Verizon, Surewest/Everest, Level 3, Unite Private Networks, Ideatek, Kansas Fiber Networks, Zayo, Cogent, and Hurricane Electric.

### References

Additional references can be provided after our Board decides to move forward with the partnership with the City of Lawrence.

### **Technological Approach**

Free State Broadband will build a direct fiber connection to houses and businesses. Here's how it works:

1. We'll connect the public internet and our services to a middle mile ring throughout the City of Lawrence. The City's existing dark fiber assets could be used as a part of this middle mile ring.
2. The middle mile ring will be connected to telecom cabinets in neighborhoods that divide the fiber into small bundles heading towards clusters of homes/businesses.
3. A fiber cable passes through the neighborhood and from that cable each home/business is provided at least one strand of fiber that delivers connectivity to our services.

Our NOC will manage the network 24/7 to ensure connectivity, quality, speed, reliability, and protection against cyber-security attacks. Sophisticated network electronics would be placed in our data center in Kansas City, a small precast 12' x 30' building, on the sides of neighborhood roads and at our customer's location.

Our network's technical architecture is a hybrid design offering both GPON and Active Ethernet. Our GPON architecture allows for a theoretical minimum of 78 Mbps and a theoretical maximum of 2.5

Gbps. The Active Ethernet portion would be dedicated at a synchronous speed set by the customer contract. Our current optics allow for speeds up to 10 Gbps.

We would request the City to provide dark fiber lease agreements with a irrevocable right of use (IRU) clause to satisfy programming contract requirements.

**Pricing**

	Standard*	Guaranteed*
<b>Internet Pricing</b>	~ \$75/mo	Determined by Customer Contract
<b>Internet + TV Pricing</b>	~90/mo to ~130/mo depending on TV package selection	Determined by Customer Contract
<b>Internet + TV + Phone Pricing</b>	~115/mo. to ~155/mo. depending on TV package selection.	Determined by Customer Contract

\*Details are not finalized for the Lawrence market. These details are provided for illustrative purposes only.

Discounts will be available for qualifying low-income customers.

**Timeline**

May 2014 - Complete Market Validation.

We’re conducting market research to demonstrate sufficient actual demand in Lawrence to support our business operations. Based on the results of these surveys, our Board will make the decision whether or not to move forward with the City of Lawrence.

Summer 2014

Should our Board decide to move forward, initial construction could begin as soon as the Summer 2014. Service activations would follow construction and initial activations could occur by the end of 2014.

Construction would be ongoing and neighborhoods will be prioritized based on the results of actual demand.

**Requests from the City**

From the perspective of an internet service provider, we respectfully request information about existing infrastructure, lease agreements to access to existing infrastructure including existing conduit and dark fiber leases, tight collaboration to make construction speedy and predictable.

Specifically, we request to lease 25% of the existing available fibers as shown on the RFI allowing plenty of remaining fibers to allow for a competitively neutral environment. We request an addendum to our existing licensing agreement to allow for the installation of additional middle mile lines and electronics in the public rights way throughout the City of Lawrence.

From the perspective of a company expanding into Lawrence, we respectfully request a economic development incentive package that reflects both the direct and indirect job creation as well as the investment of nearly \$70M on internet infrastructure required to build out the City of Lawrence.

Specifically, we request an easily accessible lot and a 3,000 sq ft building in Venture Park. Additionally, we request space to set a 12' x 30' precast one-story aggregation non-occupied building with surrounding space; approximately 1400 sq ft.

### **Scope**

We will not operate as a common carrier. Our network's quality, speed, and reliability is our "secret sauce". We don't want to share our secret sauce with competitors. We prefer to focus our energy on providing Lawrencians a great experience with an internet company built in 21st century.

We will divide Lawrence into clusters of houses/businesses based on the technology architecture. Once these "fiber-hoods" are created we'll launch a pre-signup phase to determine which neighborhoods have sufficient demand to support a FTTH network.

We anticipate rolling out to neighborhoods throughout the City prioritized by the actual demand for our services.

Very Respectfully,  
Mike Bosch  
Cofounder & CEO