

Request for Proposal No. 2017-MBI-02

WG+E

WESTFIELD GAS + ELECTRIC



whip city fiber



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Ed Donnelly
Massachusetts Technology Collaborative
75 North Drive
Westborough, MA 01581

RE: Request for Proposal No. 2017-MBI-02

Dear Mr. Donnelly,

Please find Westfield Gas + Electric's response for proposal. Please allow this response to indicate our desire and willingness to work with any subject town under the previous municipal ownership model to design and engineer, procure, construct, and operate a municipal internet network.

I look forward to speaking with you further on how Whip City Fiber may be a viable option to the private grant option as defined in this request for proposal.

Sincerely,

Daniel J. Howard
General Manager
Whip City Fiber
Westfield Gas + Electric



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1.0 Executive Summary

Westfield Gas & Electric (WGE) /dba Whip City Fiber (WCF) is an Internet Service Provider (ISP) based in Westfield, Massachusetts. The company offers high bandwidth Internet access to its customers.

WGE is a company driven to provide customers with a complete solution to their entire current and future Internet and private network needs. The company's customer base includes all consumers and all businesses in Westfield Massachusetts.

WGE benefits from several strategic alliances by receiving very competitive pricing on services, allowing the company to offer competitive pricing on its services to customers.

WGE has a world-class management team with direct knowledge of the industry, extensive research experience, and unique administration skills.

WGE has revenues in each of the last 5 years in excess of \$75M. WGE has been building and operating commercial networks, internet service, and dark fiber offerings for over 15 years, and recently began constructing and operating a residential network in 2015. The subscriber base for combined gas and electric nears 30,000, and we are seeing significant growth in our Whip City Fiber customer base, all while competing against a large incumbent.

WGE intends to formally express its interest as a partner to any town or entity wishing to design, construct, and operate a municipal internet network.

As a municipal light plant (MLP) duly authorized under Massachusetts General Laws Ch. 164, the WGE would assist any town or entity which has also enacted their own municipal light plant, through an inter-MLP agreement, as allowed under MGL Ch.164. WGE would utilize the MBI middle mile network where feasible to deliver lit or dark fiber service, and leverage geographic efficiencies to reduce backbone and service costs. This would allow municipalities to maintain ownership of the assets within their territory.

1.1 Mission

The mission of Whip City Fiber is to provide customers with best internet service value possible.

The Westfield Gas & Electric has established a reputation for quality work and exceptional service and plans to leverage its experience to its Whip City Fiber venture. The WGE seeks to become a well-known and respected provider of internet service and data solutions by increasing availability to future customers and adding service offerings.

1.3 Keys to Success

The keys to success for the Whip City Fiber will include:

1. Targeting the major driver of expenses by securing low cost, reliable, internet backbone services.
2. Increase demand for WGE's internet and higher bandwidth service through aggressive marketing and exposure.
3. Increase exposure through customer education, marketing, and advertising.

2.0 Company Summary

Whip City Fiber is a service of the Westfield Gas & Electric Light Department (WGE), which operates natural gas and electric distribution franchise territories in Westfield, MA since 1899.

The Department serves almost 30,000 accounts with electric and natural gas distribution service over 40 square miles, and has established a reputation for low-cost, reliable, and friendly service. Of its customer base, roughly 20,000 are electric customers and 10,000 are natural gas. This customer base is comprised of 18,000 residences, 1,500 commercial, and 500 industrial customers.

Westfield Gas + Electric has been providing high bandwidth internet and point to point Ethernet services to many of its key accounts for over 15 years, at a price point that is extremely competitive in the marketplace. It has been able to do so through the use of fiber-optic cable the Department installed for its use 20 years ago, but did not fully utilize. Whip City Fiber seeks to expand internet service to other customers, through a systematic and phased approach.

2.1 Company Ownership

Whip City Fiber is a service of the Westfield Gas & Electric Light Department, which is an independent department of the City of Westfield, under the control of six elected and one appointed municipal light board members, who report to the ratepayers of the utility. The Department's operations are autonomous to those of the City of Westfield as prescribed in Massachusetts General Laws, Chapter 164.

2.2 Company History

Initially, fiber optic cable was constructed to benefit the utility by ceasing its reliance on high-priced data circuits purchased by the predecessor to Verizon. As a result, the WGE constructed over 60 miles of backbone fiber in three interlocking rings around the city, connecting utility facilities, all through internal resources.

Once complete in the late 1990's, the optical system was expanded to sever the City's reliance upon high-priced, low speed data circuits provided by the telephone company. The Department then constructed drops to all municipal facilities including the school system.

Over the next few years, the WGE continued to find value in the installed fiber, through connecting all municipal and school facilities with high speed data networks. Operationally, the Department

replaced its Supervisory Control and Data Acquisition (SCADA) communications that connected the Department's remote facilities, providing secure, real-time, high speed communications to key operational assets. Additionally, connecting municipal facilities allowed the City to realized savings through a centralized data center design, rather than previously distributed computing. At this time, WGE provided installation, activation, and network support services to the City.

During this time, another market began to present itself to the WGE. Large commercial customers had a need to connect up different facilities to each other within Westfield. WGE leveraged its available fiber to provide both lighted and dark fiber connections. Lighted fiber is fiber cable that the WGE provides data transmission equipment at each end, whereas dark fiber is provided to those customers who wish to handle their own data circuits. The WGE also provided internet service to these customers. Without any marketing or advertising, the WGE had over 30 of its largest customers with the fastest internet in the city for business class customers. Comcast, which had previously avoided the business market, and having saturated the residential market, entered into the business market. WGE was able to maintain its customer base, as its level of speed and service outweighed Comcast's low price, low speed service. Throughout this time period the WG&E did not actively market this service.

2.3 Company Locations and Facilities

Whip City Fiber is a service of the Westfield Gas + Electric. It will utilize much of the operational support already in place for the other two business units.

WGE has a 115,000 sf Operations facility in Westfield that houses operations management, inventory, and vehicle assets. Additionally, a 10,000 sf business office is located in downtown Westfield, MA which houses customer service, billing, and finance staff.

WGE has several remote, unmanned, facilities in Westfield that will serve as Whip City Fiber key locations, such as:

- Buck Pond substation, located on the north side of Westfield on Summit Lock Road
- Elm Substation, located centrally in Westfield on Meadow Street
- Union Street City Gate Station, centrally located on Union Street
- Granville Road Property, located in the southwest of Westfield



All of these locations will help serve as options for equipment housing as the business grows. Whip City Fiber will monitor the need for decentralized service locations within subject towns based upon the number and location of partner towns.

3.0 Services

Whip City Fiber intends to offer a broad range of interrelated telecommunication services through a systematic rollout of additional services that add to the ones launched prior.

As the foundation to all future service offerings, Whip City Fiber would work with partner towns to construct either centralized or distributed gigabit passive-optic networks (GPON), to increase availability of high bandwidth internet to residential customers, and Ethernet and dark fiber to commercial and industrial customers.

3.1 Service Description

Whip City Fiber will provide its customers with high-speed access to the internet and supporting services. Some of the package offerings are as follows:

- The flagship internet service: up to 1 gigabit per second (Gbps) symmetrical (both up and down) internet access.
- Alternate lower tiered internet service: at the request of the partner, rates divisions as low or as high as 1 gigabit symmetrical internet access.
- Trend Micro Internet security suite with every account. Trend Micro Internet Security 10 software provides advanced protection and privacy so customers can do things online safely. It's designed to safeguard customers on social networks like Facebook, Google+, Twitter, and LinkedIn. It protects against viruses, blocks dangerous websites, guards against identity theft, and protects children online.
- Up to five hosted email addresses, through Whip City Fiber's on premise servers. Per their choice, consumers can remain with their current provider.
- Optional Wi-Fi AC router. Dependent upon partner's desire, customers may elect to have managed Wi-Fi service from Whip City Fiber. Whip City Fiber will install and manage a Wi-Fi router within the customer's residence.
- Optional static IP addresses. Customers by default will receive dynamic IP addresses. Customers may purchase dedicated static IP addresses.



- VoIP service. Hosted through its partner, Ooma, and locally serviced through Whip City Fiber, customers will have premium service VoIP service available.
- Billing, maintenance, engineering, administrative and tech support services provided through existing resources of the WG&E.

4.0 Upgrade

Whip City Fiber fully expects that as consumers needs increase, so to must its network. In our financial models, we have assumed and calculated for a network head end and subscriber equipment replacement cycle of five years, and are prepared to upgrade to XG-PON and XGS-PON, and other NG-PON technologies, such as TWDM-PON, as those technologies mature and the market demands.

5.0 Coverage

Given that the MBI middle mile connects the subject communities, Whip City Fiber would work with those communities that are subject to this grant. Whip City Fiber would fully expect to utilize the MBI network to supply internet service to the host community. Given the number of towns partnering with Whip City Fiber that have adjacent geographic boundaries, Whip City Fiber would work with hosts to develop and design the best approach to lowering backbone service costs through interconnected networks, while ensuring that designs incorporate the option for a stand-alone service connection to MBI, should a formerly connected host community wish to separate at a later time.

At all times, Whip City Fiber would recommend and emphasize town ownership and control, and enforce designs that allow for flexibility of selection of network operators.

6.0 Service Offerings and Prices

Whip City Fiber is pleased to offer the following preliminary cost proposal for its services. These costs are provided as a baseline, and are subject to deviation based upon further discussion and review. As stated previously, Whip City Fiber would work with host communities to develop service tiers, if so chosen. However, Whip City Fiber would recommend one service tier at gigabit rate. It is important to note that the cost to service each subscriber does not directly correlate to the bandwidth supplied. A pricing structure totaling the costs consisting of back office services, backbone costs, debt repayment, pole licensing, and depreciation reserve would be calculated with each town. Other indeterminate costs would be field customer service and field network support, as these costs would vary, dependent upon the level of interested towns, and the expected service level. It should be fully expected that these costs decrease as more towns partner with Whip City Fiber.

Engineering and Design

1	Data Collection Route Validation.....	\$1176 per mile
2	Pole Attachment Heights	\$12 per pole
3	Final Strand Maps	\$86.50 per mile
4	FTTH Fiber & Splice Design	\$510 per mile
5	Pole Application Processing.....	\$10 per pole
6	Pole Application Fees	At Cost

Scope:

Item 1

- Includes house count, commercial count, MDU count, by pole served based on existing power drop service routing.
- Pole Tag (Verizon and Power Utility)
- Road & Street Lines, building silhouettes, bridge crossings, RR, DOT hwy, All structures - Utilizing available GIS resources.
- Main Distribution OH to show span footage
- Main Distribution UG to show span footage, including proposed HH and pedestal locations (treated as pole locations for pricing)
- Drop Services including all individual services to building will be noted as OH, UG <150', if >150' pathway will be surveyed with path and

- footage noted (UG will be to the best of our ability through site review, aerial will be at same per pole rate.
- Hi-level make ready analysis for communication space attachment by general conditions of pole and existing pole attachment findings (into High, Med, Low categories)

Item 2:

- All communications attachments and secondary attachment heights captured

Item 3:

- Create Final Strand Map
- To include buildings, roads and known structures (bridges, RR, etc)

Item 4:

- Provide complete FTTH layout design services for a GPON architecture design, including backbone ring and feeder distribution
- Select location of field FDH cabinets (pole mount)
- Splice schematics to serve entire FTTH network - physical layer only
- Complete Bill of Materials (BOM) and schedule of estimated values
- Hard Copy Deliverable will be construction drawing set based on a grid layout with keymap and splice diagrams
- Final deliverable will be in either ArcFM (FM Manager) or ArcGIS Shape Files

Item 5:

- Elco and Telco Pole application preparation and submittal
- Application management
- Make ready management / coordination
- Oversight & reporting until license is received
- The deliverable on this item is the final pole attachment license from each telco and elco utility.

Price does not include the following:

- Application fees
- Make Ready Expenses
- MR design services
- Pole Load Analysis
- Electrical design services

Assumptions:

- Building silhouettes, bridge crossings, RR, DOT hwy, structures will be shown utilizing existing GIS resources
- UG distribution lines will be recommended, with note that existing utilities are not known, and proper clearance must be maintained.
- Waveguide will attempt to legally gain access to private properties to collect data, but will not do so without permission.
- Final architecture will be reviewed with owner prior to design.
- ArcGIS Shape files available for owner to import into their systems.
- ArcFM (FM Manager) will be based on the WCF library setup

Procurement

7	Construction Contractor Bidding	1.25% of construction bid
8	Material Bidding and Procurement	1% of material costs

Scope:

Item 7:

- Preparation of all construction specifications
- Preparation of all contract documents
- Pre-bid meeting with prospective contractors
- Notice in Central Register, Comm-Buys, and Prevailing Wage
- Setup in WCF electronic sourcing and bidding platform
- Contractor evaluation and reference verification
- Bid Evaluation and award recommendation

Item 8:

- Preparation of all material specifications
- Preparation of all contract documents
- Pre-bid meeting with prospective vendors (if required)
- Notice in Central Register and Comm-Buys
- Setup in WCF electronic sourcing and bidding platform
- Bid Evaluation and award recommendation

Project Management

9	Full Office and Field Project Management Services	Approximately 6% of Total Network Costs
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Scope:

Item 9:

- Project Management to manage overall program to delivery of successful project between contractors, field project managers, and vendors
- Field project managers to manage customer /contractor communications and contractor management
- Quality Control and Quality Assurance
- Administrative Staff to support customer calls, field project managers

Network Operations

10	Circuits from town to WCF Edge Router(s), per month:.....	Negotiable
11	Internet subscriber cost, per month:	\$40
11.1	Program Management.....	Included
11.2	Customer Service	Included
11.3	Sales and Marketing.....	Included
11.4	Web Site.....	Included
11.5	Billing.....	Included
11.6	Tech Support.....	Included
11.7	Email	Included
11.8	Network Security	Included
11.9	Network Monitoring	Included
11.10	Legal and Regulatory.....	Included
12	Voice Over IP Subscriber cost, per month	\$12
13	Distribution Maintenance	Negotiable

Scope:

Item 10:

- Development of cost effective circuit paths from subscriber towns to WCF edge routers
- Dependent upon total subscriptions, and requested topology.

Item 11.1: Program Management

- Oversight of program implementation
- Direct access to senior executive 24X7X365

Item 11.2: Customer Service

- Separate 800 number to WCF Call Center
- Physical Payment Center 8:30am to 5 pm, Monday - Friday
- Call Center Account Agents available 8:30am to 5pm, Monday – Friday,

Item 11.3: Sales and Marketing

- Custom branded correspondence
- Quarterly sales literature
- Bi-monthly email literature

Item 11.4: Web Site

- Web site to capture customer applications and interest

- Custom URL
- Reporting
- Customer Relationship Management

Item 11.5: Billing

- Billing Template setup
- Rates management
- Physical bill presentment
- Online bill presentment
- Collections
- Reporting
- Tax payments, as required

Item 11.6: Tech Support

- Tier 1 Help Desk 24 X 7 – Phone Support
- Tier 2 Help Desk 7 am – 6 PM, Monday - Saturday
- Tier 3 Network Support 24 X 7
- Tier 1 Field Support – 7am – 6pm, Monday - Saturday
- CPE Trouble Call Support 7am – 10 pm, Monday – Saturday.
- Field Trouble Call Support 7am – 10 pm, Monday – Saturday.

Item 11.7: Email

- 1 email address
- Custom domain
- Web access

Item 11.9: Network Security

- 1 license of TrendMicro

Item 11.10: Legal and regulatory

- FCC Form 477 filing
- FCC Form 499A filing
- Digital Content Millennium Act (DCMA) administration
- Communications Assistance for Law Enforcement Act (CALEA) management

Item 12: VoIP

- Customer Service as described in 11.2
- Legal and regulatory: Universal Service Fund fees, taxes, and fee calculation.
- VoIP Features, to include:
 - Free U.S. calling
 - Caller-ID and call-waiting
 - One-touch voicemail access
 - Online call log
 - Fax Mode
 - Optional Bluetooth Adapter
 - The utmost voice clarity
 - Caller-ID blocking
 - Remote Voicemail Retrieval
 - Online Preferences
 - Live Customer Support
 - 911 Service



- Call Hold
- Online Voicemail Playback
- Area Code Selection
- Encrypted calls
- 911 Email and Text Alerts
- Call Return
- Online phonebook
- 7/10-Digit Dialing
- Optional WiFi Adapter
- Free calling to Canada
- Caller Name
- Anonymous call blocking
- Voicemail alerts
- Private Device
- Instant Second Line™
- Voicemail monitoring
- Call forwarding
- Voicemail-to-email forwarding (audio)
- Private Voicemail
- Three-way conferencing
- Do not disturb
- Online Voicemail Playback
- Multi-Ring
- Send to voicemail
- Personal Number
- Backup Number
- Community blacklist
- Free Mobile Minutes
- Voicemail-to-text (\$4.99/mth)
- Google Voice Extensions

Item 13

- Construction and repair personnel as required
- Construction equipment, materials
- Traffic control
- Testing
- Splicing
- Repair stock
- Supervision

7.0 Operational Structure and Capacity

Westfield Gas + Electric currently has the back office resources available to support 30,000 gas and electric customers, including account service and customer service, billing, operational management, a 24x7x365 dispatch center, a 24 hour tech support line, and network support. We currently employ over 100 employees and contractors to support our three business units.. It is our intention to grow our support staff in accordance with our business plan at a rate of one field technician, one help desk technician, and one customer service representative for every 2,500 customers added. Our networking staff consists of one network architect, three network engineers, one fiber network engineer, and a database administrator. We are able to keep our costs low by sharing costs across other business units that similarly need those services to operate.

We have already established the mechanisms to assist towns in the marketing, acquisition, and prioritization of construction in order to maximize revenue



7.0 Assurance of Long-Term Service

Westfield Gas + Electric has been in business since 1899, and as stated previously, has been servicing data and internet customers for over 15 years. We stand by our service and fully intend to support any customer for now and into the future. We intend to work with any partner to assist them to design their network so that it is agnostic to operator, and allows for future competitive bidding for network operators.

8.0 Project Schedule

It is difficult to ascertain a definitive project schedule. Although we are certain any construction and service associated work can be completed in a mutually acceptable time frame, the quantity of towns partnering with Whip City Fiber would need to be determined.



9.0 Experience and References

In addition to its near 20 years of telecommunications experience, Westfield Gas + Electric currently has over 2500 passings and is in the midst of a \$15 million construction program for the passing of another 10,000 potential subscribers.

We currently are partnering with the Town of Otis for the design and engineering of their network, and have a number of other communities and entities that we are in active discussions with.