



Received & Inspected

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MAR 10 2014

March 3, 2014

FCC Mail Room

Jonathan Chambers  
**Federal Communications Commission**  
445 12th Street, SW 20024  
Washington, DC

**Re: Expression of Interest** – Rural Broadband Experiments Connect America Fund,  
WC Docket No. 10-90

Dear Chairman Wheeler, Commissioners, and Mr. Chambers,

This letter is to express MGW's interest in receiving funding from the Rural Broadband Experiments announced at the January 30<sup>th</sup> FCC Open Meeting.

### **Background**

Mr. Ronald Smith started MGW Telephone and began serving voice services in Bath County Virginia in 1967. MGW is currently serving Bath, Highland, Augusta, Pulaski, Carroll, Grayson, and Wythe Counties and cities. As an ILEC, we offer Carrier Class local and long distance voice services. We are an Internet service provider offering Broadband, xDSL, Dial up, FTTH, High Speed Fixed Wireless, and Microwave P2P backhaul. Craig Smith and his sons, Ryan and Chase make up the third generation in their family business. Craig graduated with degrees from Ferrum and Radford University. Craig currently serves on the following telecommunication boards: VTIA, ERTA, & NTCA.

We offer IT consulting, network design, engineering, network equipment, cloud computing, network monitoring, system management, WiFi, and content filtering. We are the managing partners for fiber networks in several towns throughout Virginia. We develop marketing campaigns, websites, publications and events that reach out to the communities and businesses in the area. We assist county development authorities with potential office projects, data centers, 911 call centers, sheriff's offices, local police offices, DMV, and town municipalities. We have multiple services and business relationships with banks, schools, libraries, newspapers, hospitals, restaurants, manufacturing industries, private businesses, bed & breakfast and hotels.

**Company Assessment:** Our communication business is built on both monthly and yearly assessment of existing telecommunications services in relationship to the demand and availability of the current services. We have six central offices, serving over 5000 customers, dial tone, Long Distance, VoIP, xDSL, Metro-E, FTTH, and Fixed Wireless.



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MGW utilizes Ditch Witch trenchers, directional drills, and plows to bury copper and fiber cable in house. Our in house engineers design network plans to improve and deploy new services needed, while being conscience of the economical construction and design cost that is involved.

**“Last Mile” Service:** Applications, usage and utilization all play a vital role in provisioning and deployment of broadband services. The critical areas that are often over looked are deployment of “last mile” solutions. We use a combination of fixed high-speed wireless equipment and GPON fiber.

**“Middle Mile” Connectivity Solutions:** One of the major components in connecting consumers to the Internet is the backbone connection that is hinged on the “middle mile”. We currently use Fiber networks to connect to three different Internet POPs. In order to reach customers that have no broadband services available to them, we have utilized, Air Fiber, and Licensed Microwave point-top-point links as options to promote connectivity to distribution points such as data centers, central offices and towers to deliver services over the “last-mile”.

### Geographic Territory

MGW Networks plans to build the middle mile in order to connect to the Augusta County, Bath County, Pulaski County, Wythe County, Carroll County, & Grayson County. A 40-mile fiber build project from Millboro, Staunton, and New Hope.

### **Proposed Areas for fiber build:**

Rt. 250 Buckhorn Inn East to Churchville (3 miles)	\$132,000.00
West Augusta Rt. 250 to Staunton, VA (19 miles)	\$836,000.00
Rt. 42 Fiber Hut to Millboro Elementary School (3 miles)	\$132,000.00
Rt. 614 Virginia/WVa to Sugar Grove Observatory (10 Mile)	\$440,000.00
Staunton Va to Millboro Va (30 miles)	\$1,320,000.00
Warm Springs to Mountain Grove/Rt.601 (14 miles)	\$616,000.00
RANA- Rockbridge Area Network Authority (11 miles)	\$484,000.00
Staunton to New Hope Cooperative Telephone (10 miles)	\$440,000.00
2 – Tower Structure and Site prep	\$20,000.00
Wireless/Networking Equipment	\$275,000.00



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### **Eligible Telecommunications Carrier (ETC) Status**

MGW Networks, LLC has applied to be Eligible Telecommunications Carrier (ETC) while MGW Telephone is currently an ETC.

### **Practical and Technical Processes**

MGW proposes multiple steps in building a next generation network test bed. This will include the following:

1. While deploying broadband services up to Gigabit connections our design is to be connected to the CS 1500 soft-switch to offer voice services to all areas.
2. Coordination of direct IP interconnection with other providers in the area such as LEC and Cooperatives for interconnection agreements. Enabling a broad range of connectivity bypassing the traditional TDM network through IP networks.
3. Document routing and database changes of the direct IP interconnections
4. Validate 911/PSAP, local fire, police and hospital services using VoIP. We'll work with entities having IP interface capabilities and making conversion to test all operations.
5. Verifying implementation of cyber-security to stay compliant with CPNI.
6. Initializing VoIP QoS for both Fiber and Wireless scenarios throughout all networks
7. Contacting and informing new customers in the selected tracts/blocks and contacting existing customers receiving new services to participate in the experiment.
8. Implementing VoIP over xDSL, FTTH and Wireless transitioning from POTS.
9. Working with vendors, education, manufactures, businesses, doctors and hospitals to validate inner operability with medical devices, fax machines, security alarm systems, alerts and monitoring systems in a VoIP environment.
10. Develop a six-month initial analysis of the functionality and operations of current LIDB database comparison to the IP telephony numbering system, to insure no disruption of service.
11. To insure access for the disabled to connect to IP communications based on National Lifeline Accountability Database.
12. To work with local and state governments in collaboration to better understand the needs and demands of the consumers.

### **List of Anchor Institutions**

Bath County Public Schools, Galax Public Schools, Grayson Public Schools, Bath County Library, Galax Library, Wythe Regional Library, Grayson Library, Twin County Regional Hospital, Millboro Medical Clinic, News Leader newspaper, Grayson National Bank, Frederick House, Grayson Inn, Crossroads Institute, Buckingham Branch Railroad, City of Staunton, Town of Independence, YDI, Law offices of John Hoe, Timberlake, Smith, Thomas, & Moses, Town of Goshen and Fire Departments.



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### **Proposed technology**

The technology of choice is FTTH and we have been successful with both residential and businesses deployment that is economically feasible and realistic. GPON technology allows us to use a single fiber (middle mile) from a central office (POP) to a strategic geographical location for customer deployment (last-mile) that allows a single shelf (equipment C7/E7 Calix) to support up to 5,120 subscribers using a 64:1 split ratio.

**Current residential packages: speeds 5Mb - \$39, 15Mb \$49, 25Mb \$69 & 50Mb \$99.**

The second choice of technology we use to backhaul traffic, connect multiple points or campuses, and to deploy broadband services over the “last mile” to consumers is Fixed Wireless. Ubiquiti wireless equipment provides the availability of new cutting-edge UniFi enterprise access points (AP) for outdoor deployments with innovative Multi-Lane RF technology faster speeds and more capacity. Together these products are designed to enable large enterprises, universities, municipalities, event organizers and more to extend their WLAN deployments everywhere with high performance, affordable Wi-Fi outdoor access points. Residential clients will benefit from the coverage, reliability, and scalability. We can offer higher speeds and reach customers that are located further out.

**Current residential packages: speeds 3Mb - \$29, 5Mb \$39, & 10Mb \$49.**

### **State and/or Local Government Support for Project**

The five counties we are looking to serve directly are all in favor of MGW Networks designing and building new fiber and wireless networks to offer broadband services to their residents, schools, and businesses. (Augusta County, Bath County, Pulaski County, Wythe County, Carroll County, & Grayson County) Some of the counties have already give us written agreements for right away and access to water towers.

### **Project Timeline**

Funding awarded	
Engineering and Design –	2 months
Materials Ordered –	2 months
Construction –	12 – 24 months
Deployment –	6-12 months
Delivery	6 – 24 months



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**Regional Community Network** (*connecting carriers, LECs, Cooperatives, and government*)

New Hope, Hardy, Spruce, Highland, TWR, TDS, RANA, and Military Installations.  
CLEC: VA, WV, and NC

**Scalability**

As a service provider, deploying the Calix C7/E7 FTTP solution will provide subscribers with up to a GE of data bandwidth, along with digital video delivered over either RF or IPTV. For voice services, the Calix E7 provides the option to provision SIP, H.248, GR303, or a mix of all three technologies. As with all Calix E7 advanced services, GPON can be provisioned in the same shelf as other service interfaces. This network allows us to deploy dial tone, voice services, and video.

The Calix equipment we currently use provides a standards-based Extended Reach GPON solution that expands the serving radius from 20 km to 40 km — a fourfold increase in serving area. Calix Extended Reach GPON makes use of a compact, pluggable Extended Reach optical interface module (OIM) inserted into any one of the four available ports on existing Calix E7 GPON optical line terminal (OLT) cards.

Using technology at the “head end” allows us to design a “HYBRID” Fiber/Wireless network to deploy all of the same type services over a high-speed fixed wireless network to residents who have never experienced broadband services.

Our proposal is to create a network that will meet demands of consumer both at home and at work with the increase of demand for greater capacity and new services. Being innovative is our opportunity to design networks that work to deliver broadband services for today while planning for tomorrow’s needs and demands. Our HYBRID network design is a scalable design that will enable us to deliver more capacity and throughput than ever before. We are using an Air Fiber product for “back haul” connections that is a fixed, point-to-point wireless link that has speeds up to 1 Gb.

We chose Ubiquiti Networks, which designs, develop and markets groundbreaking flexible, compact wireless broadband equipment ideally suited for network operators, WISP’s and military applications. Ubiquiti Networks products comply with industry broadband standards, including WiMAX, Wi-Fi and are designed to work with standards-based customer premise equipment. We deploy CPE at homes and businesses for the fraction of the cost of satellite installations, faster speeds and more reliable connections; without the latency and weather interference experienced with satellite technology. We deploy VoIP and video services over Fixed Wireless to include surveillance.

**Total Business Investment**

To launch a 5 county rural broadband initiative to connect towns, businesses, and residents; to design and build a 99-mile fiber network. Cost \$4.6 million dollars over the next 24-36 months



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### Investment Needed

Our broadband design and deployment project would require a one-time funding from the Rural Broadband Experiment; Connect America Fund.

Total one-time amount \$4.6 million

### Supportive Projects

We are currently working with right-of-way and engineering a 30 mile “middle mile” fiber project that allows us to connect to back-bone connections and serve residential customers and businesses along the way; to include enabling the local railroad company to retire 60 year old copper plant for signaling and use IP technology over this fiber network for signaling and communications. The fiber network will be providing local IP communication services to residents and businesses, as well as providing better services, less down time, improved railroad safety and reliable communications between dispatchers and train engineers. This fund would enable us to start this project in 2014. This project will provide fiber services to one of the local railroad companies where no fiber is available, connecting schools, medical centers, residential customers and small town municipalities that have not experienced broadband services.

### Total Project Cost

Fiber	\$4,356,000.00
Wireless	\$295,000.00
<b>Total</b>	<b>\$4,651,000.00</b>

Thank you for considering our Expression of Interest in your decision about the amount of funding that will be allocated in the Rural Broadband Experiments. We commend the FCC in this effort to connect rural communities and are ready to help you close the digital divide. We want to be a part of the solution and to see all homes in America have broadband services available to them, while striving to help small and large companies do better business in the future.

Sincerely,

A handwritten signature in black ink that reads "R. Craig Smith". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

R. Craig Smith  
President  
MGW