



Response to

PPEA-RFP #19-22742 CONCEPTUAL PHASE BROADBAND PROPOSAL

Response Date 5/21/2019

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1. Introduction to Lumos Networks

1.1 Connecting You to Your World

Lumos Networks, is a leading fiber-based local exchange carrier headquartered in Waynesboro, VA. The company has proudly provided integrated communications services to rural Virginia markets since 1897 and offers high-speed residential and business-class broadband internet, digital television, digital telephone, and managed Wi-Fi services. The full suite of telecommunication services are supported by local, professional customer care. Lumos Networks is part of Segra, one of the largest independent fiber bandwidth companies in the U.S.

Lumos Networks has operated a retail store, a local exchange, and a service facility in Botetourt County for more than a century. We are proud participants in the local economy, employing more than 80 full time professionals and supporting a wide variety of events and non-profit organizations.

1.2 Our Story

Lumos Networks began providing local telephone service in 1897 and has a reputation for delivering innovative telecommunications services and outstanding customer support.

In 2011, after decades of providing leading-edge wireline and wireless solutions, the Lumos Networks brand was created to focus specifically on Fiber-based residential and small business applications. By 2017, Lumos Networks had become part of EQT Infrastructure, and in early 2018, merged with Spirit Communications. In 2019, the companies combined to form Segra, one of the largest independent telecommunications companies in the U.S., and our regulated, local exchange markets retained the name Lumos Networks.

Our innovation as a first-to-market telecommunications industry leader is legendary. Lumos Networks was the first and only provider in our markets to provide high-definition IPTV services, and the first to reach 20 Mbps broadband speeds, which we soon followed with the first GIG (1,000 Mbps) service. We were the first to offer symmetrical GIG speed broadband, and recently became the first to introduce business-class Internet profiles of two, four, and eight GIG symmetrical speed services.

This innovation has made Lumos Networks so much more than the local phone company. More than half of our local exchange carrier network is now fiber-based, and our advanced services include Gigabit Fast Fiber Internet, managed Wi-Fi, digital television, and digital voice services.

Simply put, our story is this – Lumos Networks delivers state-of-the-art communications services on a high-speed fiber optics network. We have a passion for innovative solutions and a commitment to outstanding customer and community support.

1.3 Our Mission

Lumos Networks is a trusted Telecommunication services provider. We promise to connect you to your world by offering and supporting innovative, next generation telecommunication services over an advanced fiber-optic network.




Our Guiding Principles:

- Adhere to the highest levels of honest, ethical, and professional standards
- Build long standing relationships by delivering genuine, positive customer experiences
- Enhance our local quality of life by being responsible, involved community stewards
- Consistently deliver technology that excites and provide service that excels
- Embrace a culture where employees can grow both personally and professionally

2. Qualifications and Experience

2.1 Lumos Organization

Lumos Networks was formed in 1897 and throughout our 120 plus years we have transitioned our customers through the different changes in technology. Lumos Networks first started deploying Fiber to the home in 2008 with the first production customer being in Botetourt County at Ashley Plantation. Since 2008, Lumos Networks has completed multiple major fiber buildouts including a RUS program in the Alleghany Highlands that was completed in 2014 with over 5,300 addresses built. With the desire of wanting a dedicated organization for the residential section of the business, the Residential and Small Business organization was formed in February 2014 with Diego Anderson as General Manager. Through this structure, the organization had fully dedicated teams in its Customer Care, Marketing, Product, Service Delivery, Network Support and Engineering teams. The current structure include over 120 personnel that have a combined experience and knowledge over 700 years. Below is the current Leadership organization of Lumos Networks.

 <p>Diego Anderson SVP & GM</p>	<p>Mr. Diego Anderson is Senior Vice President and General Manager and supports engineering, operations, sales, marketing, and service delivery. Originally from Charleston, SC, he earned a B.S. in Electrical Engineering Technology from South Carolina State, and a Masters in Administration from Central Michigan University. Mr. Anderson has more than 25 years of experience in various business management and executive leadership roles.</p>
 <p>Rob Cale SR. Director of Product and Marketing</p>	<p>Mr. Rob Cale is Senior Director of Product and Marketing, and responsible for product commercialization, lifecycle management, and marketing communications. He is originally from Waynesboro, VA, and holds a B.S. in Business Marketing from Radford University. Mr. Cale's 25+ years of experience has included leadership roles within marketing, product management, and branding.</p>
 <p>David Smith SR. Director of Technical Operations and Planning</p>	<p>Mr. David Smith is Senior Director of Technical Operations and Planning. He is responsible for network and field operations, engineering, outside plant, and project management. Mr. Smith is originally from Covington, VA and holds a B.S. in Information Systems Management from Bridgewater College, and a MBA from Averett University. He has more than 10 years of experience in Information Technology and Telecommunications industry along with various business management roles.</p>



Todd Denning
Director of Care and Service
Delivery

Mr. Todd Denning is Director of Care and Service Delivery, and supports call center operations for customer care, loyalty, and service delivery. Originally, from Southern California, he attended Crafton Hills College in Redlands, CA, and moved to Virginia in 2000. Mr. Denning has more than 20 years of experience in leadership roles including Customer Service, Systems Administration, Workforce Management, and Service Delivery.



John Bell
Director of Program
Operations

Mr. John Bell is Director of Program Operations, and responsible for systems, processes, training and quality assurance. He is from Covington, VA and earned an apprentice degree in digital electronics and an Associate's Degree in Business Management from BRCC. Mr. Bell has been with the company for 44 years, including 13 years in various craft positions and the past 31 years in various management and leadership roles.



Heidi Padgett
SR. Manager of Residential
Sales

Ms. Heidi Padgett is Senior Manager of Residential Sales, and supports the Company's retail and inside sales organizations for residential sales and order services. Originally, from Bedford, VA, Ms. Padgett has been with the company for 20 years, serving in management and leadership positions for the last 10 years.



Mike Joseph
Small Business Development
Manager

Mr. Mike Joseph is the Small Business Development Manager and is responsible for supporting an enterprise sales team, developing and maintaining business relationships, and uncovering new opportunities. Mr. Joseph is from Harrisonburg, VA. He joined the company in 1994 as a local business account executive, and later led a sales team of business account executives covering multiple states before joining and leading outside sales efforts for Lumos Networks.

2.2 Alternative Connect America Model (ACAM)

In 2016, Lumos Networks accepted the FCC program called ACAM that replaced the USF funding that Local Exchanges received from the government. This funding requires Lumos Networks to provide 25M/3M services to over 3,200 underserved addresses across our 3 Local exchange areas. This program was a 10 year program where the funding was dispersed each year with the first milestone being required in 2020 and Lumos would have to make service available to 40% of the funded addresses. After 2020, the requirement goes up by 10% each year with the program concluding in 2026.

In 2019, the FCC released a revised program that required an additional 364 addresses to be serviced with 25M/3M service instead of the initial 10M/1M service. With the change in requirement, the FCC also extended the program from 2026 by 2 years to 2028. This also changed the requirement for the 25/3 addresses until 2022 and Lumos will have to make service available 40% of the addresses.

This program does require Lumos Networks to provide service to all these addresses by the end of the program. A portion of the addresses identified in the PPEA are considered ACAM and will be built as part of the overall project. The ACAM project will also allow for Lumos Networks to densify its already existing fiber network in Botetourt County allowing for Lumos to provide fiber services to areas further out in the edges of the county and potential for some of the other areas identified in the PPEA.

2.2 Financial Capability

Lumos Networks is a privately held company by EQT which is a leading investment firm with approximately EUR 50 billion in raised capital across 28 funds. EQT funds have portfolio companies in Europe, Asia and the US with total sales of more than EUR 19 billion and approximately 110,000 employees. EQT works with portfolio companies to achieve sustainable growth, operational excellence and market leadership. Any projects would have availability to financial funding through regular fiscal approval and funding for portions of the proposed area through ACAM funds.

2.3 Fiber Buildout Approach

Lumos Networks deploys a Gigabit Passive Optical Network (GPON) system that utilizes one fiber that can feed up to 32 customers. The part that takes the single fiber and serves up to 32 customers, is referred to as a splitter and usually resides in a Local Convergence Point (LCP) cabinet out in the field. Lumos Networks has an experienced team of outside plant planners, engineering and construction and partner with a number of potential vendors for larger scale projects.

2.4 Similar Projects

Lumos Networks has completed a number of large-scale projects over the last 5 years. These projects are listed below.

- Alleghany Highlands RUS – This project resulted in over 5,300 addresses getting access to Lumos’s fiber network. This was a partnership grant with a total project cost at \$16 million dollars. The project scope included providing fiber services to the Lumos LEC territories in Alleghany County. This project was completed in 2015.
- 2017 Fiber Builds – Lumos Networks performed a fiber overbuild project that resulted in bringing fiber service to over 800 addresses. The project was completed within 6 months.
- 2018 Fiber Builds – Lumos Networks performed the 2nd phase of the overbuild projects that resulted in bringing fiber service to over 1,000 addresses. This project was completed in 7 months.
- ACAM Projects – Lumos Networks has completed a number of ACAM funded areas over the last 2 years. This has resulted in more than 300 addresses now able to receive fiber services.

3. Customer Service

3.1 Overview of Lumos Networks Customer Service

Lumos networks has a dedicated team of customer service representatives to provide top of industry care to our customers. The customer care experience is regularly monitored by our Quality Assurance teams and tracked by customer surveys. The customer survey results are used to determine a Net Promotor Score (NPS). The customer service group is available to our customers 24/7 with our average speed of answer for 2019 being at 72 seconds. Submitted

3.2 Systems used for Customer Service

Lumos Networks has a number of systems in place to help keep track of the overall customer experience. Inside of our Customer Relationship Management (CRM) platforms, Lumos personnel create a customer account that will be linked to an address. Once this has been completed, this is the location that services can be added and removed or any billing related items can be resolved.

For customers that are experiencing service issues, Lumos utilizes a trouble ticketing software. This ticketing platform is integrated with CRM so all the account details can be carried over into the ticket. Once a ticket is created, the ticket is then managed by our network control center team and working with the appropriate teams in resolving the issues. Lumos Networks has implemented a number of measures inside the ticketing system to help make sure all tickets are resolved in a timely manner. Some of these measures include flagging items for idle time, dispatch, chronic issues (customer having multiple tickets in last 30 days), etc.

3.3 Fiber Broadband Speed Packages

Lumos Networks currently offers 4 different speed packages to our residential fiber customers. The customers have the opportunity to bundle their service with our TV, Voice or WIFI services to achieve our bundled pricing. Below is the current non-promotional pricing for our broadband speeds.

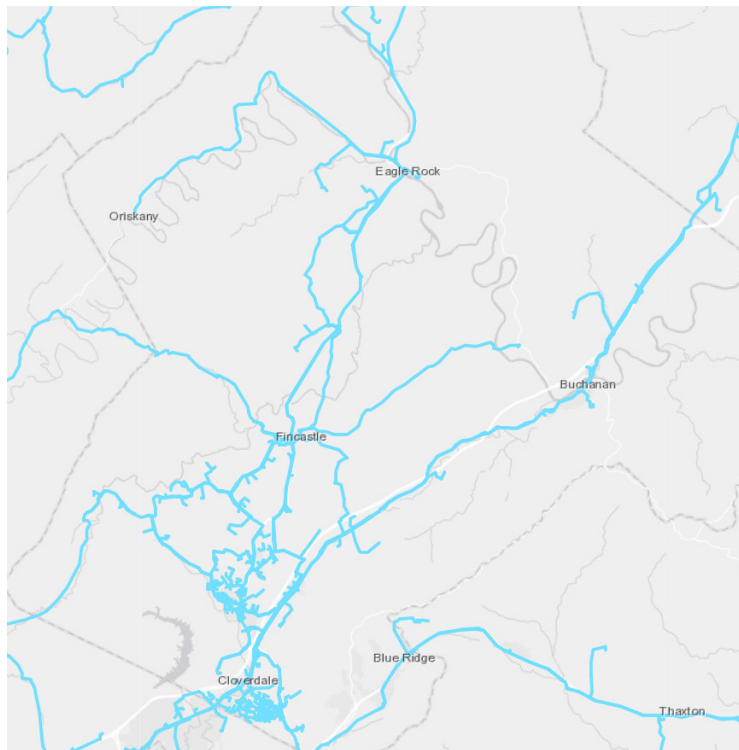
Package	Speeds	Solo Price	Bundled Price
Basic	25 Mbps Download 5 Mbps Upload	\$44.95	\$29.95
Essential	75 Mbps Download 20 Mbps Upload	\$59.95	\$44.95
Premium	150 Mbps Download 40 Mbps Upload	\$74.95	\$59.95
Ultimate (GIG)	1000 Mbps Download 250 Mbps Upload	\$89.95	\$79.95

Lumos Networks also offers symmetrical services for each of the broadband packages along with 2GIG, 4GIG and 8GIG packages for business services.

4. Special Requirements

4.1 Conceptual Solutions to provide fiber services

Lumos Networks conceptually could service the designated areas utilizing the robust fiber network that already exists today in Botetourt County. Lumos currently has the most fiber in Botetourt and being able to utilize the fiber and establishing GPON type of services off the long haul fiber. Below is a diagram of our current fiber footprint.



The proposed solution would follow the same model we have used in the recently deployed Flowing Springs and Craig Creek areas. In those areas, Lumos Networks utilized the existing fiber in place, established a LCP location off the current fiber. From the LCP, Lumos would build distribution and multiport fiber throughout the area which extends the fiber to the premises and allows for the customers to have access to our fiber network.

A number of the areas listed in the PPEA are inside Lumos Network's LEC boundary and considered ACAM addresses which requires Lumos Networks to provide services to those addresses by the completion of the ACAM project. The areas that fall into our LEC boundaries include P2-A1, P2-A4, P2-A5, P2-A6, P2-A7, P4-A1, P4-A2. Those 7 areas will be serviced as part of Lumos Networks ACAM overbuild project with the exception of P4-A1 and this area can be addressed with the fiber densification need to support the ACAM areas.

Areas P2-A2 and P2-A3 borders the northern part of Lumos Networks LEC boundary and we currently have fiber on Route 11 and Springwood Road that we can utilize. This will need to be potentially funded outside of ACAM since it does not include any funded addresses to Lumos. This would be an ideal area for a partner grant program with Botetourt County.

Area P4-A3 is outside of the Lumos Networks LEC area and the closest fiber that is in the area is over a 3 mile fiber build. This would take Botetourt and Lumos working together to find the right amount of funding to provide service to this area as the fiber build just to get to the area would cost at least \$200,000.

Area P6-A1 this is outside of the Lumos Networks LEC area but Lumos does have fiber available on Webster Road that can be used to establish a LCP location. This area is costly due to the amount of underground neighborhoods and the cost to cross the rail road tracks. This would be another area that Lumos Networks would be willing to look at a partner grant with Botetourt to offset the higher expenses.

4.2 Broadband Network Capabilities

Lumos Networks goal of building out fiber areas include being able to control cost so that the price points mentioned above can stay at the competitive amount.

Along with the fiber build itself, Lumos Networks has recently invested over \$2 million dollars in upgrading the core network that supports the services. These upgrades included new routing hardware, adding physical link redundancy that allows now at least 3 physical paths for each area for internet and upgrading the access gear to 10G uplinks to support growing bandwidth needs. Along with these upgrade, Lumos Networks also has capacity monitoring software and currently has capacity augments plans in place to continue meeting the customer expectations.

4.3 Current Lumos Networks Broadband Coverage

Currently, Lumos Networks offers Fiber broadband services to over 23,000 addresses. Out of those 23,000 addresses, almost 10% are classified as business address with the other 90% being residential.

4.4 Estimated Price and Timeline for Detail Design

Lumos Networks proposal would include Lumos designing, implementing and maintaining the network once it is deployed. Based on prior fiber builds in this type of terrain and density, the expectation should be that the total project will cost at least \$3,250 per address passed. Looking at the total amount being 1,587 addresses that would make the project total cost be at least \$5 million dollars. In compliance with the PPEA request, it is estimated it would take Lumos Networks between 75 – 90 days to provide a detail project plan that includes field walk outs and potential permits needed for the total project.


4.5 Ownership and operation of proposed network

Any broadband network that is constructed by Lumos Networks would have full ownership and responsibility by our company Lumos Networks. This includes getting all the appropriate permits and ongoing maintenance cost in keeping the network functioning.

10. PROPOSER'S CERTIFICATION

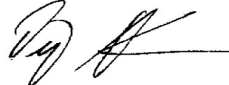
After first being placed under oath, I hereby certify that I have authority to submit this proposal on behalf of the Proposer whose name appears above, that I am a principal of the Proposer, that the Proposer hereby acknowledges the provisions, terms and conditions of this PPEA Solicitation including all attachments and addenda and agrees to be bound by those provisions, terms and conditions. The Proposer furthermore agrees to be bound by all of the terms and conditions in the Botetourt County PPEA Guidelines. I acknowledge that the Proposer is authorized to transact business in Virginia, and neither the Proposer nor any member of its team or their principals is currently suspended or debarred from public contracting by any federal, state, or local government entity. I have taken reasonable steps to ascertain the accuracy of all the information contained in this proposal and this certification, and that the information in this proposal and certification is accurate to the best of my knowledge or information and belief.

Name and Address of Offeror:

Lumos Telephone of Botetourt Inc. Date: May 21, 2019
One Lumos Plaza By: 
Waynesboro (Signature in Ink by Officer of the Corporation)
Virginia Name: Diego Anderson
Zip Code: 22980 (Please Print)
Title: Senior Vice President and General Manager
Phone: (540) 946-8687 Fax: (540) 941-2020
E-mail: Diego.Anderson@Segra.com State of Incorporation: Virginia
State Corporation Commission # 00036251

Proposer's or Proposer's Contractor's Virginia Class A General Contractor's License Number

Proposer's or Proposer's Architects and Engineers Virginia Registration Numbers:



Signature

Diego Anderson

Printed/Typed Name

Senior Vice President and General Manager

Title (Principal of Proposer)