Qwest Corporation d/b/a CenturyLink QC (Lumen)
Request for an Arizona Broadband Development Grant
Rural - Mammoth (Pinal County)
(01/31/22)

Background

Lumen (and its predecessors, including Qwest Corporation, or "Qwest") has been a telecommunications and high-speed internet (HSI) provider in Arizona for decades.

[redacted]

Over the last several years, the company has completed numerous Fiber to the Premise (FTTP) projects in Arizona. The company already has approximately 200,000 fiber-enabled homes in Arizona, with plans to continue to expand. This demonstrates that the company has extensive experience building FTTP and the expertise to successfully complete grant projects.

Without the requested state grant, there are no plans to expand fiber-enabled homes in the Mammoth project area because, for the company, it is not economically feasible.

The company will utilize Gigabit Passive Optical Network (GPON) FTTP, a 100% fiber-based technology for the households and small businesses within the project area. This will allow customers to order high speed internet with symmetrical download and upload speeds, of up to 940 Megabits Per Second (Mbps).[1]

The company will provide service through its Quantum Fiber brand for this area. The current pricing and terms and conditions for Quantum Fiber, is located at the following website:

https://fiber.q.com/fiber/s/welcome

Lumen is a global communications, hosting, cloud, and IT services company enabling millions of customers to transform their businesses and lives through innovative technology solutions. Lumen is the 2nd largest U.S. communications provider to global enterprise customers. The company offers network and data systems management, Big Data analytics and IT consulting, and serves customers in more than 60 countries. The company provides broadband, voice, video, data, and managed services over 450,000 global route miles of fiber.

[1] This will significantly exceed the required minimum 100/100 Mbps speed once the project is completed. Also, FTTP is a scalable technology and even faster speeds will be possible with future equipment upgrades.

While Lumen is a global company, it is also an Arizona company. Lumen provides service throughout the State of Arizona.

For services for large business and enterprise customers, see the following links:

https://www.lumen.com/en-us/home.html
https://www.lumen.com/en-us/networking/business-fiber.html

Project Description

Qwest Corporation d/b/a CenturyLink QC (Lumen) requests an ABDG-Rural grant so that it can build FTTP to about 1,002 customer locations in a project area within Mammoth, Arizona. The company utilized various internal and external information, such as information from Dun and Bradstreet, to help it determine the number of households, businesses and anchor tenants located within the project area. Based upon this analysis, the company believes there are about 966 households, 29 businesses and 7 anchor tenants located within the project area.

The estimated population within the project area is 1,217. To come up with this number the company first developed a list of the Census Blocks within the project area. See **Attachment 1 – Mammoth CBs** for a list of Census Blocks within the project area. Population data was retrieved using Alteryx software. See **Attachment 2 – Alteryx** for information about the process for using Alteryx software to develop the estimated population within the project area.

Estimated Costs

With FTTP for this proposal, the electronics, conduit, feeder fiber and distribution fiber facilities will be constructed within the 2-year time frame.[2] For this project the company will be placing about 17.01 miles of aerial and buried fiber within the project area. Upon completion of the project, all customers locations within the project area will be able to sign up for fiber high speed internet service.

When fiber internet service is ordered by a customer, the fiber drop connection, Optical Network Terminal (ONT) and gateway equipment will be placed to the customer location.[3]

[2] The company believes it should be able to complete this project within 2 years from the contract execution date. However, there may be factors/issues outside of the company's control, such as supply chain/material delays, contract construction resource limitations, permitting delays or other issues that may necessitate a longer than 2-year time frame to complete project construction.

[3] Depending upon the type of fiber services ordered by businesses and anchor tenants, they may not be able to be served with a fiber drop but could require placement of an entrance fiber cable and other types of equipment, which would need to be done on a separate project.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Estimated Time for project completion

Attachment 6 – Mammoth Project Timeline is a chart showing the proposed/estimated time for the key steps necessary for project completion within 2 years. Before it is possible to develop a more detailed timeline, such as the information that would be useful for a Gantt chart, the project engineering will need to be completed. The project engineering will not begin until after contract execution.

Upon contract execution the company will begin the detailed planning and project engineering to develop the project details necessary so permitting can begin as well as material ordering, which is necessary before construction can start. It is anticipated given the size of the project this will be separated into multiple phases. The initial phases could complete within the first year and the

[4] In developing the estimated cost for the fiber drops, ONT and gateway, the company assumed a 60% take rate within the 2-year required construction completion time frame. During this time frame, customers signing up for service will not be charged for any of these costs. After the end of the 2-year period, new customers signing up for service may be charged. If the state wants to allow a longer time frame for this, the company is willing to extend this by at least 6 months.

final phase completion most likely taking place during the second year. As soon as a phase is completed, customers will be able to sign up for service within these areas.

The company is solely responsible for submitting the application, planning the project, engineering and construction of the project and, once completed will own, operate and maintain the network for a minimum of five (5) years, as required by the ACA, in order to provide services to customers within the project area.

Project Area Maps

The following maps and information about the project area.

Attachment 1 – Mammoth CBs, list of Census Blocks, in the project area.[5]
Attachment 7 – Mammoth Project Map, picture showing the project area.[6]

When the project is engineered, after contract execution, a detailed map of the infrastructure placements and access points can then be developed.

Employee and Vendor/Contractor Qualifications

Until, the project is engineered, the company will not know all of the employees that will be involved with the project as well as the vendors and contractors that will be used for construction.

However, the company has the expertise and capability to successfully build, operate and maintain the network.

Confidential Attachment 8 – Key Employees is a sample of key employees, with a synopsis of their experience and qualifications.

Low Income Assistance Programs

The company participates in the Affordable Connectivity Program (ACP) for qualified low-income customers. Information about this program is located at the following website:

https://www.centurylink.com/aboutus/community/community-development/lifeline/acp.html

[5] This is can also be provided in a machine-readable format, Excel file.
[6] This can also be provided in a KMZ and/or Shape file format if needed.

The company also participates in the FCC Lifeline program Information regarding this program is located at the following website:

https://www.centurylink.com/home/help/account/consumer-assistance-programs.html

Qualified low-income customers can subscribe to these programs and receive offsetting monthly credits for high-speed internet service. [redacted]

Other Project Outcomes

Bringing significantly improved internet access to the residents of Mammoth, can help improve the quality of life. Residents will have the ability to access information, conduct personal and professional business, connect with friends and family members, take advantage of educational opportunities through the internet, converse with people throughout the world, compare options for major purchases, watch movies and shows when it is convenient for them, and game with friends in other parts of the world. These are just a few of the advantages most people take for granted when they live in an area where broadband services are available.

Enhance Economic Development: The proposed project will clearly enhance the economic development potential of the project area. Broadband connectivity is among the most important tools for economic development in the state and the broadband connectivity gap remains one of the most significant barriers to furthering economic development in rural Arizona. Broadband is a critical element in community well-being and in many places is a minimum condition for economic competitiveness.

Another key economic benefit of broadband is it affords households the ability to effectively and productively work from home or operate a home-based business. Home-based businesses also create an opportunity to evolve into business establishments outside of the home environment and become sources of additional future employment. While some households do work from home or operate home-based businesses without broadband (largely due to broadband unavailability), the percentage of households working from home or operating a home-based business is significantly higher when broadband connections are available to and are used by the household. Additionally, broadband connectivity that enables effective work from home options creates new employment opportunities for households and opens up additional labor forces for employers regardless of location. As experienced during the Covid pandemic, being able to work at home proved to be critical. It is very difficult to effectively work at home without adequate high-speed internet.

Rural businesses may realize greater benefit from effective broadband connectivity than their urban counterparts because online sales can remove geographic barriers to reaching customers and supply chains. In a highly connected world, prospective customers are more apt to search for many products and services online. Any business that wants to be found by new customers, locally or globally, needs to be where those customers are looking, and those customers are looking on the Internet. Internet invisibility is a formidable barrier to the success of many rural businesses.

Benefiting Education: The availability of high-speed Internet service will enhance every level of education from kindergarten through college. With the advances in information and communications technology, education is no longer confined to the classroom. As experienced during the Covid pandemic, at home learning has become very critical. Broadband-enabled education tools will permit remote collaboration among students on projects, videoconferences with teachers, and real time video exploration of faraway areas. The educational advantage possible with improved broadband is indispensable to students.

Improving Health Care: This project will help create shared services that reduce operating costs and provide patients with a broader spectrum of enhanced services. Improved broadband will facilitate the delivery of long-distance clinical healthcare, remote patient monitoring, and professional health-related education. Telemedicine is particularly important for patients in rural locations because of the scarcity of primary care physicians and specialists.

The delivery of telemedicine services will include clinical services such as consultations, examinations, and real-time monitoring of patients. Telemedicine will also include a number of non-clinical services such as doctor/patient communications, continuing medical education for healthcare providers, and physician training. Beyond this there are time and cost saving elements related to telemedicine which deliver critical medical services to residents of remote areas who would otherwise be unable to receive a high level of medical care. Enhanced broadband has the potential to enable applications which will utilize streaming video, multimedia, wireless communications, and semi-robotic surgical and examination tools for the delivery of healthcare services.

Public Safety and Emergency Responders: Public Safety and Emergency Responders, will benefit from this project which will enable response teams to be connected to vital information that will improve coordinated, timely reaction to accidents and disasters, and offering first responders access to the information and tools they need to make decisions and seek support.

Note: Because the narrative is in a pdf format, **Attachment 9 – Website Links** is in Word format and contains all of the website links referenced in this narrative to make easier to access the sites.

Type	Project	Applicant	GEOID
Rural	Mammoth	LUMEN (Qwest Corporation dba CenturyLink QC)	04021002200
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