



3196 County Hwy 55 * Hamilton, AL 35570 * Phone: 205-921-6712 * Fax: 205-921-6738

2018 Grant Application

Applicant Information

Project Name:	Southeast Marion County
Legal Name of Entity:	Tombigbee Communications, LLC
Mailing Address:	3196 County Hwy 55 Hamilton, AL 35570
Name and Title of CEO:	Steve Foshee, CEO
Name and Title of Contact:	Brenda Overton, CFO
Phone Number and Email of Contact:	205-921-6741 boverton@tombigbee.org

Project Description

Southeast Marion County, the proposed funded service area in this application, is located East of Winfield and Brilliant, AL in Marion County in Northwest Alabama. As shown on Attachment B – Project Description – Service Area Map – SE Marion County, the proposed area will serve the more rural areas of East Winfield and East Brilliant, which contains 426 households and 6 businesses, with a fiber to the premise network constructed as a broadband IP Ethernet network with (1) gigabyte of bandwidth for each location. By constructing this network, Tombigbee will provide a significant increase in the quality of life for the individuals living here by providing access to high speed Internet that will be used for education, employment, safety, and an overall improvement in circumstance. As shown on the map attachment, this project will cover approximately 68 road miles that does not currently have 10/1 service. The city of Winfield is a small community with a population of 4,448 according to 2010 census data.

Tombigbee firmly believes in serving the community. With that overarching principle guiding them, the goal is not only to provide broadband but to empower those living in the Whitehouse Community to take advantage of this life changing technology. It is the ultimate goal of Tombigbee, to provide the community with broadband services that will promote the much-needed economic development in this area. As a result, the young people who are currently finishing high school and going off to college will have the opportunity to come back to the area in which they were reared, raise a family, and prosper in their chosen careers.



3196 County Hwy 55 * Hamilton, AL 35570 * Phone: 205-921-6712 * Fax: 205-921-6738

The proposed funded service area has suffered a loss with the reduction of coal mining in the nearby community of Brilliant. As described in the study, An Economic Analysis of the Appalachian Coal Industry Ecosystem: Human Capital and the CIE, prepared for the ARC, that Marion County had a high (above the Appalachian median) dependence upon coal since 2005, it experienced a high negative coal industry ecosystem (CIE) impact. As of 2015, Marion County had a high CIE risk of experiencing additional hardships, should the local coal industry continue to decline. This same study also described extreme difficulties when trying to find equivalent employment opportunities. Many coal related occupations and skills may transfer to careers in construction, manufacturing and transportation, but often coal related skills are very specific, making them impossible to transfer to another career. It is because of these economic challenges, Tombigbee wants to extend their fiber optic network into the Whitehouse Community.

Economic Characteristics - The proposed service area in this application has a poverty rate of 12.2%. According to "DataUSA", the average household income for the Winfield Community is \$36,691 which is below the state average by \$8,067 and below the national average by \$20,926. In 2010, when the last census was completed, the unemployment rate for this community was 4.1% as compared to a national unemployment rate of only 4.7%. There are no major employers in the proposed funded service area which is leading to a declining population and that is in persistent poverty with an annual out- migration of 2% per year.

Educational Challenges –While the schools surrounding the proposed area have some broadband services, many of the students attending these schools do not have access to such services at home. This makes it very difficult for the students in this area to compete with those from other areas of the state and nation. These students struggle with completing research, getting tutoring when they are behind and because the schools systems in this area are small, they do not have the ability to receive the same education level as students in other areas of the state.

Based on repeated discussions with the state superintendent, the county superintendent, principals and teachers, lack of high speed Internet access at home is the number one barrier Marion County students face regarding homework. This grant will allow Tombigbee Communications to build the needed facilities to each home and to provide affordable broadband services with speeds up to 1/1 GB, well above the 25/3 MB grant speed requirement. Using this broadband connectivity, students in the proposed area will benefit from the ability to access, watch, and download assigned educational materials from home and will be better equipped to complete their homework accurately and on schedule.



3196 County Hwy 55 * Hamilton, AL 35570 * Phone: 205-921-6712 * Fax: 205-921-6738

Broadband availability in the proposed service areas will also remove the limitation of students relying on outdated, over-utilized school facilities that are only available during school hours. Currently, students must complete any work assignments that require online access on-campus during the hours of 8:00 am – 3:00 pm, Monday – Friday. The only way to break the chain of poverty is through education and this grant is the vehicle that will drive opportunity to an area in critical need of outreach and support.

Attached are letters from the State Superintendent of Education, Gary Hollingsworth speaking for the Marion County School system as the Winfield City Schools Superintendent, describing the challenges they face on a daily basis due to the lack of broadband access. While the Winfield City Schools aren't in the proposed area, students live in the area and would benefit tremendously. (See attachments B1 - Marion County Superintendent.pdf and B2 – Winfield City Schools Superintendent.pdf).

Health Care Needs – While there are no public medical clinics and hospitals in the proposed area, the locations served will gain access to www.teladoc.com and other nationally known and utilized telemedicine websites at a higher rate of broadband speed which will increase the likelihood of proper and expedited care for the patient. Also, clinics, hospitals, and physicians located in other areas will be able to monitor patients through Wi-Fi in the home as provided by the 1 Gigabit connection to each residence. As a result, patient outcomes will significantly improve as will overall quality of life. While the Lakeland Community Hospital, Northwest Medical Center, North Mississippi Medical Center and the Northwest Mississippi Primary Care Clinic aren't in the proposed funded service area, they are very close and many of the residents of the proposed area use these facilities. Attached are letters from all three, describing their challenges as well as what broadband in this community means to each of them (see attachments B3 – Lakeland Community Hospital.pdf, B10 – Northwest Medical Center.pdf, B4 - North Mississippi Medical Center.pdf and B5 - NMMC Primary Care Clinic.pdf).

Public Safety Issues – In addition to the economic, education and health care concerns of the residents living in the proposed area, the local emergency, law enforcement, and fire protection agencies will gain significant boosts in their ability to provide safety to the people in this area of Marion County. As a part of Tombigbee's pledge to increase the quality of life for the area, they will give 24/7 high speed Internet access to all relevant emergency crews, sheriff department personnel, and fire station teams. This access will provide these agencies with the unprecedented ability to search files, conduct work, and deliver online training for maximum efficiency and operational improvement. This access will be provided at no charge. Included with this application are letters from Mayor of Brilliant, a representative of the Marion County



3196 County Hwy 55 * Hamilton, AL 35570 * Phone: 205-921-6712 * Fax: 205-921-6738

Commissioners Office as well as the Chief of Police of Haleyville describing their support (see attached B6 – Brilliant Mayor.pdf, B7 - Marion County Commission.pdf and B8 - Haleyville Police.pdf).

Service Offerings

freedomFIBER is currently providing Internet speeds ranging from a minimum of 100 Mbps up to 10 Gbps symmetrically, meaning both upload and download speeds are equal. Voice services are also included in the services offerings from Tombigbee Communications and they include unlimited local and long distance calling (continental US only), along with voice mail, caller id, call waiting, call forwarding as well as many other features. All of the service offerings from Tombigbee Communications have no data caps or limits of any kind.

Residential Services

<u>Service Type</u>	<u>Cost/month</u>
Residential – 100 Mbps	\$49.95
Residential – 1 Gbps	\$79.95
Residential VoIP	\$29.95*

Commercial Services

<u>Service Type</u>	<u>Cost/month</u>
Business Lite – 100 Mbps	\$49.95
Business Pro – 200 Mbps	\$199.95
Business Enterprise – 1 Gbps	\$499.95
10 G Business	\$1,995
Business Voice	\$34.95*

**This is a per line charge and does not include any taxes and fees associated.*

Multiple service offerings are available for business accounts, which can meet the needs of any business entity from an entrepreneur working at home to the largest multinational corporation. Business customers have the ability to utilize Managed Services, Tombigbee’s version of the *Easy Button* for any businesses IT department. Managed Services also provides for monitoring and maintenance of the network equipment whether owned by the business itself or leased from Tombigbee. Businesses that would like to upgrade their phone systems, but aren’t sure what is needed or don’t want to make a large investment, can also take advantage of Tombigbee’s cloud-based hosted voice solution.

Technology

The GPON (Gigabit Passive Optical Network) architecture deployed at Tombigbee Communications is compliant to the international standard ITU-T G.984. GPON was selected for its reliability and longevity in terms of deliverable bandwidth and its advantages in construction costs and maintenance using economies of scale. GPON shares a single fiber among many users, typically 32 users, though more are technically possible. Upstream and downstream data is transmitted over two different wavelengths using the same fiber. Near the end of the circuit a passive device known as a splitter, is installed which allows the single fiber



3196 County Hwy 55 * Hamilton, AL 35570 * Phone: 205-921-6712 * Fax: 205-921-6738

to be divided into 32 separate fibers. These separate fibers at the output of the splitter are used to connect homes or businesses to the network.

A significant advantage of the GPON architecture is its longevity and scalability. This fiber architecture can remain in place for 30 to 40 years which equates to the life of the fiber plant. As demand for bandwidth increases, the GPON plant remains in place and unaffected, while the electronics at either end of the fiber circuit changes to accommodate innovation and product evolution. The GPON architecture represents the best broadband solution for the future; its bandwidth, latency and reliability will remain unmatched by competing solutions.

The GPON solution deployed at Tombigbee Communications is in use worldwide and is compliant with regulatory standards in both the United States and international communities.

ANSI regulatory compliances include:

- NEBS Level 3
- GR-1089 CORE
- GR-63 CORE
- NRTL listed
- FCC Part 15

ETSI regulatory compliances include:

- EN 60950-1
- AS/NZ 60950
- IEC 60950-1
- EN 300 386

International Optical regulatory compliances include:

- ETSI EN 300 19
- ETS 300 753
- ETSI EN 300 386
- ETS ES 201 468
- ETSI EN 60950
- ITU-T K.20/21/27/31/35/45

Network Design Components

Tombigbee Communications has deployed a state-of-the-art network that is scalable, highly redundant, all fiber, and Gigabit capable with a sub-100ms latency value. Below is a breakout by function:

1. Redundant Dedicated Internet Links – Tombigbee Communications has two (2) geo-redundant 10 Gbps circuits that connect to Tier 1 providers for access to the Internet. These circuits are easily scalable to 100 Gbps as demand necessitates.
2. Core Router – The core router has a non-blocking architecture that utilizes industry standard protocols. Although initially equipped with 10 Gbps uplink ports, the transition to 100 Gbps is seamless.



3196 County Hwy 55 * Hamilton, AL 35570 * Phone: 205-921-6712 * Fax: 205-921-6738

3. Access Equipment – The FTTH network will utilize GPON technology from the non-blocking ADTRAN TA5000 octal OLT line cards. The design includes support for 20km and 27km optical budgets.
4. Fiber Optical Cable Plant – The fiber architecture is primarily aerial and consists of mainline construction utilizing high fiber counts, connecting to laterals that terminate into multi-station terminals. These terminals have outputs that allow a pre-connectorized fiber drop to be installed. The drop terminates at a network interface device (NID) that is installed at the customer premise.
5. Customer Premise – The resident’s customer premise equipment consists of an indoor Optical Network Terminal (ONT) coupled with a residential gateway. The residential gateway also serves as a high-performance wireless router that also has wired Gigabit interfaces for customer connectivity.
6. Network Quality - Sub 100ms network latency is achieved and provides for fast and reliable service delivery over a 100% non-blocking fiber infrastructure.
7. Gigabit Speed Delivery – Tombigbee Communications has technology in place to monitor the peak utilization of the dedicated Internet circuits. Once a peak utilization of 80% is met, additional bandwidth will be added.

Project Cost Estimate

	Tombigbee Funded Costs	Grant Funded Costs	Total Costs
Network And Access Equipment	100,136	25,033	125,169
Outside Plant	902,428	225,608	1,128,036
Customer Premise Equipment	68,752	17,188	85,940
Professional Services	221,538	55,385	276,923
Other Upfront Costs	24,568	6,142	30,710
Grand Total	\$ 1,317,422	\$ 329,356	\$ 1,646,778



3196 County Hwy 55 * Hamilton, AL 35570 * Phone: 205-921-6712 * Fax: 205-921-6738

Project Milestones and Timeline

Project Objectives and Activities	2018	Year 1 (2019)				Year 2 (2020)		
	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3
Receive Award	X							
Complete Construction Drawings (Final Design)		X						
Create Bill of Materials		X						
Submit Permits		X						
Order Materials		X						
Receive Materials			X					
Distribution Fiber for PFSA (approx. 63 miles) (8-10 Weeks)			X	X				
Fiber splicing and Testing			X					
All Access Fiber Construction Complete			X	X				
Begin Sales Efforts			X					
Customer Installs			X	X	X	X	X	X

See Attachment B - Project Description – PE Certificate – SE Marion County.pdf for the engineering certificate.

Management Experience

Initially, Tombigbee Communications has contracted with FiberRise, to assist in the operation and maintenance of the broadband network. FiberRise are experts in the design, construction, and operation of community-scale fiber networks. Headquartered in Huntsville, FiberRise has extensive experience in this field as its employees have provided support for broadband and communications services to customers across the United States for several decades.

The bios of the key employees are attached (See B8 - FiberRiseBios.pdf). Also, Tombigbee Communications has been constructing and operating a fiber network providing service to customers in northwest Alabama since mid-2017. Currently, Tombigbee has over 3,000 subscribers purchasing a combination of broadband and voice services and this number grows by roughly 50 subscribers per month.

Tombigbee Communications has achieved success in its short history of broadband operations through attracting customers, installing service, and reacting to market conditions. Tombigbee Communications, LLC is a wholly owned subsidiary of Tombigbee Electric Cooperative, which has provided decades of service and knowledge to the area since 1941. The board,



3196 County Hwy 55 * Hamilton, AL 35570 * Phone: 205-921-6712 * Fax: 205-921-6738

management team, and employees of Tombigbee are 100% committed to finding the best local employees to undergo training and gain hands on experience alongside the FiberRise employees in order to take over operations at the appropriate time. Tombigbee Electric Cooperative is providing assistance with installation, billing, customer service, outages, accounting, and executive management. Tombigbee Communications is not only benefiting from the corporate operations assistance from Tombigbee Electric Cooperative, but will also take advantage of the customer satisfaction provided by Tombigbee Electric Cooperative over many years of service to come.

The name Tombigbee is a highly recognized and respected brand which is well known throughout the proposed and surrounding areas and will provide instant credibility as it operates and markets the broadband service. In the eyes of consumers in the proposed area, Tombigbee is known for providing high quality, reliable, and affordable service to its members and customers. Once again, operationally, Tombigbee recognizes that it is imperative to bring in talent that has specific broadband construction, operational, support, and regulatory knowledge and they plan to seek local employees that can transition into those roles.