

Project Information

Company: REACH4 Communications

Project Description

General Info

Project #: 68
Project Name: Project 4 - Egan Area
Total Project Cost: 830,340.00
Total project cost per prospective broadband recipient: 4,173.00
Infrastructure cost per prospective broadband recipient: 4,173.00
Number of households to be served: 274
Number of businesses to be served: 7
GUMBO cost per prospective broadband recipient: 2,504.00
Number of GUMBO households to be served: 192
Number of GUMBO businesses to be served: 7
General Location/Parishes: Acadia
Base Speed (Minimum Download/Upload): 100/100
Supported Scalability Speeds (Minimum Download/Upload): 1000/1000

Qualifications and Experience:

Provide the following details:

- Number of years the applicant has provided internet services;
- A history of the number of households and consumers, by year of service, to which the applicant has provided broadband internet access, as well as the current number of households to which broadband internet access (at least 25:3 Mbps) is offered;
- The number of completed internet service infrastructure projects funded, in part, through federal or state grant programs, prior to the date of application submittal;
- Whether the applicant has ever participated in an internet service infrastructure project funded, in part, through federal or state grant programs, and if so, for each project, the nature and impact of the project, the role of the applicant, the total cost of the project, and the dollar amount of federal or state grant funding;
- The number of penalties paid by the applicant, a subsidiary or affiliate of the applicant, or the holding company of the applicant, relative to internet service infrastructure projects funded, in part, through federal or state grant programs, prior to the date of application submittal; and
- The number of times the applicant, a subsidiary or affiliate of the applicant, or the holding company of the applicant has ever been a defendant in any federal or state criminal proceeding or civil litigation as a result of its participation in an internet service infrastructure project funded, in part, through federal or state grant programs, prior to the date of application submittal

See attached.

Financial Background:

- Provide five years of financial statements, pro forma statements, or financial audits to ensure financial and organizational strength regarding the ability of the applicant to successfully meet the terms of the grant requirements and the ability to meet the potential repayment of grant funds. If the applicant has been in business for less than five years, provide documentation for the number of years in business
 - Indicate whether the applicant, a subsidiary or affiliate of the applicant, or the holding company of the applicant has ever filed for bankruptcy
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Partnerships:

Provide the identity of any partners or affiliates if the applicant is proposing a project for which the applicant affirms that a formalized agreement or letter of support exists between the provider and one or more unaffiliated partners where the partner is one of the following:

- a separate private provider of broadband service, requiring a formalized agreement; or
- a nonprofit or not-for-profit, or a for-profit subsidiary of either, and the applicant is:
 - being allowed access and use of the partner's infrastructure, on special terms and conditions designed to facilitate the provision of broadband services in unserved areas, requiring a formalized agreement;
 - utilizing a matching financial and/or in-kind contribution provided by one or more partners, requiring a formalized agreement; or
 - a parish, municipality, or school board, or any instrumentality thereof, may qualify as a nonprofit for the purposes of the GUMBO grant program. Letters of support by a parish, municipality, or school board, or any instrumentality thereof, supporting an application may be submitted as part of an application. A letter of support does not require a formalized agreement.
- Provide a brief narrative explaining how the partnership or affiliation will facilitate deployment and reduce cost per prospective broadband recipient. For applications or project areas where the nonprofit or not-for-profit partner provides only matching financial support, that information can be documented in the budget section within the relevant application or project area.

Acadia Parish Police Jury - 20% Match

For work being performed by Hudson Initiative or Veterans Initiative qualified applicants or contractors, provide documentation and/or a formalized agreement.

Gonthier Inc. DBA: REACH4 Communications is Certified-Active as a Small Entrepreneurship with Louisiana Economic Development's Hudson Initiative. This certification is valid from 10/27/2021 to 10/27/2022 . Certification No. 23093

Project Area

Assessment of the Current Level of Broadband Access in the Proposed Deployment Area

Describe the current level of service within the area and provide the data source or methodology used to capture this information. Raw data may be submitted as part of the assessment. If data is available to support differences between advertised and transmission speeds, applicants may also submit applications for areas where transmission speeds are less than 25:3 Mbps.

Egan Area For over 17 years, REACH4 has been providing internet service throughout Acadia Parish and surrounding areas. As a result, REACH4 has gained extensive first-hand knowledge of the areas where broadband service is currently available or unavailable through the normal course of business. Over the years, REACH4 has conducted thousands of site surveys and installs in these proposed areas in order to deliver broadband internet service. The methodology for assessing broadband access in these areas is simply years and years of experience and first-hand knowledge. As of December 2021, the proposed deployment area in Egan, LA has limited internet access with two different broadband service providers; ATT DSL and Boot State Technologies. ATT DSL is end-of-life and is no longer being deployed. According to its website, Boot State Technologies claims it can offer 50x5Mbps. Boot State Technologies' broadband service is fixed-wireless which requires line of sight and available spectrum. It is difficult to accurately assess the actual coverage areas where fixed-wireless speeds of 25x3Mbps can be obtained. Suffice it to say, not all locations within the Egan Area can receive 25x3Mbps service. The only way to determine actual coverage is to physically test each and every location for service.

Services

Provide a description of service options to be provided:

Service Name	Upload/download speed	Date of 1st Availability	Data Cap	# of recipients	Price
GUMBO	100/100	2022-03-01	0	281	134.95
Family	100/20	2022-03-01	0	281	104.95
RDOF	1000/500	2022-06-01	0	281	194.95

Marketing

Provide documentation for applicant engagement to connect consumers with community education forums, multimedia advertising, and marketing programs.

Advertising and Marketing Plan REACH4 does not have an organized marketing strategy. Because our service area is so small, any sort of multimedia advertising would be wasted money. The only marketing/advertising we have ever done is direct mail, yard signs, and Facebook posts. (see attached samples). Our best marketing has always been and continues to be word of mouth. However, since we started building fiber, we have found that the best advertisement is our fiber construction crew. When we are running fiber in the customers' front yards, they see our marked vehicles and even stop and speak to the construction crew. Phone calls and early sign-ups increase whenever we begin construction on new roads.

Adoption

Provide documentation that shows low-income household service offerings, digital equity or literacy support, or programs or partnerships to provide these services. The applicant should also indicate current participation in, or plans to, accept the federal Lifeline subsidy.

Community Support

Evidence of support for the project from citizens, local government, businesses, and institutions in the community, including letters of correspondence from citizens, local government, businesses, and institutions in the community that supports the project

Local Workforce

Documentation of a workforce plan prioritizing the hiring of local, Louisiana resident workers, to include a signed letter of intent with a post-secondary educational institution that is a member of the Louisiana Community and Technical College System, containing an obligation upon the applicant, and contractors or subcontractors of the applicant, to put forth a good-faith effort to hire, when possible, recent graduates of broadband-related programs.

Technical Report

Reporting Requirements

Explain in technical detail the technologies to be used in the proposed project and the broadband transmission speeds offered to prospective broadband recipients as a result of the project. If it would be impracticable, because of geography, topography, or excessive cost to design a broadband infrastructure project that would deliver 100:100 Mbps, the applicant must provide an explanation. Transmission speeds of 100:20 Mbps are the minimum allowable under this grant program.

Gonthier, Inc. ("REACH4") proposes Fiber-to-the-home (FTTH) architecture for the last mile. FTTH technologies come in two standards; Active and Passive. REACH4 plans to use Calix passive optical networks and will employ Gigabit Passive Optical network ("GPON") architecture for its FTTH, employing 1:32 distributed splits. REACH4 will deploy Calix E7-2 chassis within nodes it places, from which it will serve 247 funded passings within this project. REACH4 plans to construct almost 13 miles of predominately underground fiber plant. 1:32 splitters will be placed within hardened splice closures within clusters of served locations, what we term Fiber Service Areas ("FSAs"). Each FSA will require a single dedicated strand back to the node serving it. Fiber cables will be sized for additional splitters as needed. As there are 247 passings, we plan on approximately 8 Fiber service areas. Nodes, passings, their status and predicted equipment is reflected in the table below: Area: Egan, LA Min Speeds: 100Mbps x 20Mbps Max Speeds: 100Mbps x 100Mbps Miles: 12.20 Locations: 247 Chassis: 1 OLT Cards: 1 Splitters/FSA: 8 REACH4 intends to employ the Calix E7-2 GPON - 8 Port Cards. Each card supports 8 SFPs of GPON. As a result, subscribers will be capable of speeds of 1 Gbps download, 500 Mbps upload (1Gbps /500Mbps). A second package 100Mbps/100Mbps will also be offered., Distances within the proposed network should require no greater than Class C+ optics within each card, allowing for distances of as great as 60km from the GPON OLTs to subscribers. Each SFP is capable of speeds of 2.5Gbps download and 1.24Gbps upload in total, At the customer premise, REACH4 will use the Calix 803G Gigapoint ONT as its standard Optical Network Terminal. The 803G has, in addition to its GPON port, one (1) gigabit ethernet port and one (1) voice line. From the ONT, REACH4 intends to connect to a Mikrotik wireless router which REACH4 will remotely manage. REACH4 will also either connect phones directly to the ONT, or connect the ONT to the customer's own internal wiring. The upgrade paths available on a passive optical architecture today include both NG PON2 and XGS PON which could be employed by simply changing out electronics on one or both ends of the connection. Both modify the ITU-T G.989.2 specification and support one to sixteen (16) 10 Gbps connections on the same strand using DWDM wavelengths. Upgrade frameworks exist that allow for an upgrade to either of these specifications while allowing current subscribers to stay on the current platform, allowing for a less painful upgrade to both owners and subscribers. In either case, the currently employed distributed split model allows for flexibility when upgrades become necessary.

Explain the scalability of the broadband infrastructure to be deployed to meet future bandwidth needs.

From the outset, REACH4 identified growth of its customer base and their bandwidth needs as a key consideration for network design. For this reason, REACH4 chose FTTH, GPON for the last mile, and Calix as its access technology manufacturer specifically with its any PON solution in mind. Every served location will have a dedicated fiber strand between it and the 1:32 splitter feeding its service area, with additional fibers within each cable capable of lighting additional splitters. By this we mean that REACH4 is designing its network with more than 100% penetration in mind at the last mile. From the last mile to the GPON SFP, REACH4 plans for a single GPON SFP to serve as many as 32 customers, all potentially taking service at 1Gbps. In the event that customer bandwidth requirements extend beyond the capability of GPON at a 1:32 split, REACH4 plans to first, reduce the split to the subscriber. Second, the E7-2 is capable of utilizing XGS-PON cards, allowing 10Gbps per PON for a more robust offering. 10Gbps supporting as many as 32 customers each taking a package of anywhere from 100Mbps symmetrically to 10Gbps symmetrically. From the OLT to the switch, the Calix E7-2 platform, and specifically the GPON cards REACH4 will use, are capable of 2 ports per card at 10 to 40Gbps of transport. REACH4 will use 40Gbps uplinks in LAG configuration and will link between its Calix E7-2 and its adjacent Cisco switches to provide no greater than a 1:1 ratio between its OLT Bandwidth (Sold Bandwidth/12.8Gbps) and the switch. REACH4 middle mile network to its facilities in Crowley is composed of several owned and leased circuits, all terminating on its Cisco switches on 10Gbps optics on both ends. The network is structured such that all circuits share a proportion of the traffic to Crowley. REACH4 employs a design oversubscription ratio of no more than 60:1 for any given middle-mile segment when operating as designed, and plans to upgrade any given path as it approaches 70% utilization. Between the OLT and ONT, our hardware supports QoS using IEEE 802.1P. This QoS can prioritize lower response traffic to ensure its delivery first. Using MPLS, the middle mile and core are designed to control and allow MPLS tunnels between sites. Segment routing can avoid congesting using controllers to get real time traffic to the user, in real time.

Provide a proposed construction timeline and duration of the deployment project period. The deployment project period is the time from award of the grant agreement to the time that service is available to the targeted prospective broadband recipients under the grant. Describe estimated timeline, deployment roll-out and number of end-users to be served in each phase (10 percent, 35 percent, 60 percent, 85 percent, 100 percent).

REACH4 intends to construct this proposed network within 8 months and anticipates construction to begin within 1 month of being awarded funding. Within Egan, there are 12.20 miles of fiber to serve 247 locations. Construction will take place over 8 months averaging approximately 1.6 miles of constructed fiber per month. Furthermore, there are approximately 20.25 passings per mile. Given the expected monthly production rate of 1.6 miles per month, the following table illustrates the timeline for each phase of the project (10%, 35%, 60%, 85%, & 100%). Totals Miles to Construct: 12.20 Total Passings: 247 Average Passings/Mile: 20.25 Construction Rate: 1.6 miles/month Total Project Deployment Period: 8 months Average Passings/Month given Construction Rate: 32 (rounded) Estimated Timeline for each phase after receiving funding: 10% - Month 1, 32 end-users 35% - Month 3, 97 end-users 60% - Month 5, 162 end-users 85% - Month 7, 227 end-users 100% - Month 8, 247 end-users

X **Wired Infrastructure** **Fixed Wireless**

Wired Infrastructure Deployment Reporting Requirements

Describe the general design of the project and deployment plan and include the following:

- Explanation of the existing networks and equipment to be used for the project. If assets are owned by another entity, explain how they will be used for this project and, if applicable, provide a copy of the agreement between the applicant and the owner.
- Total number of miles of project infrastructure deployment, and the number of miles of project infrastructure deployment accounted for by preexisting infrastructure
- Detailed explanation of how the new or upgraded infrastructure will serve the prospective

broadband recipients. In the case of the installation or upgrade of a specific site infrastructure, such as a point of presence or fiber hut (fiber), pedestal (cable), or a remote exchange/DSLAM (DSL), the applicant must include:

- The number of prospective broadband recipients that will be served by that site infrastructure
- The distance from the specific site infrastructure such as a POP, pedestal, or DSLAM to the end user(s) and the expected broadband speed that will be effectively delivered
- Detailed description of the design work needed for deployment, such as, but not limited to, pole work, acquiring or updating easements, and/or property acquisition.

In the Egan Area, REACH4 already has an existing FTTH network. Except for providing backhaul data transport, this existing network will not be used for this project. All planned construction will be new deployment into new unserved areas. The total number of miles for this project is 12.20 miles. There aren't any other preexisting infrastructure deployments that need to be accounted for except for the backhaul data transport mentioned above. Upon award, REACH4 will begin design work in earnest in order to facilitate construction. This work includes: Field staking Field staking involves physical surveying of the proposed area of construction in order to identify obstructions and factors which may impact the type and area of construction. For example, side of road chosen for construction may be impacted by the presence of high pressure gas line within the vicinity of construction. Final area design & construction maps This activity includes drafting and revising maps reflective of information gleaned during field staking. The result of this action will be construction maps suitable to for construction crews to build off of, and bills of material suitable in detail to order off of. Permitting & Contracting This activity includes the production of maps and applications to secure authorization for construction in public rights of way within Acadia Parish. REACH4, as a CLEC, is granted access to rights of way by statute, and so this activity helps verify the proper path they should take. It also includes the drafting and negotiation of contracts to facilitate the construction of the proposed nearly 13 miles of plant.

Wired Assets

Existing Network	Existing Equipment	New/Upgraded Infrastructure	Installation Type	Num of Recipients	Avg Distance in Miles Between Prospective Recipients	Expected Speed
Not applicable	Not applicable	Fiber Hut	Buried Fiber	247	0.049	100/100

Budget

Budget

The project budget should reflect all eligible project costs to be funded through the GUMBO Grant Program. Additionally, the project budget should include the minimum provider funding match of at least 20%, any local government funding match from a parish, municipality, and/or school board, or any instrumentality thereof, and the requested GUMBO Grant Program funding.

Outside Plant – Mainline: Includes all labor to construct buried fiber, set handholes, set marker posts, permit fees, materials (innerduct, handholes, fiber optic cable, etc), labor to install fiber to prospective broadband recipients' house, etc. Inside Plant – Switching Equipment: Includes centralized fiber hut/cabinet, labor to install cabinet, concrete, building materials, battery backup, and network switching equipment, and permit fees. Inside Plant – Access: One time cost access for distributive splitter and OLT access, fiber patch cords, splice cases, etc. Engineering Fees: One time engineering fee to design fiber build and print construction plans for current and future customers

Proof of Funding Availability

Provide a signed letter of funding availability from each source of funds committed for the project. If loan or other grant funds are pledged, a loan/grant commitment letter from each source of funds must be included. Should an applicant be an awardee of Universal Service, Connect American Phase II, Rural Digital Opportunity Fund, or other federal or non-federal funds for the deployment of broadband service, the applicant shall attest as to whether or not the applicant's GUMBO application and associated project's buildout is dependent upon such awarded funds.

Acadia Parish Police Jury - 20% Match