

## **Bay Springs Telephone Company, Inc.**

### **Jasper County Community Connect Project**

#### **Request for Proposal**

#### **Materials for a fiber construction project**

**Response:** Respondents are not entitled to rely on any verbal clarification or response from anyone in connection with this RFP. Respondents should send inquiries or quotes for materials to Lisa Wigington at LisaW@tec.com. Final RFP due by March 3, 2023.

**Description of Project:** The Jasper County Community Connect project proposed funded service area covers approximately 104 square miles of rural Mississippi. This project will bring approximately 79.6 miles of core fiber to some of the most rural areas of Mississippi and make high speed broadband available to approximately 1,066 locations through fiber to the home technology.

**Detailed Description of Existing Operations:** Standards based, RUS approved, technology is used, and the network has been constructed using RUS standard construction practices. BST currently has 131 remote concentrators (Adtran TA5000) positioned throughout its network. BST is serving all of these remotes with fiber to the node (FTTN).

This GPON capacity will easily scale to provide Gigabit service for these customers. However, if more bandwidth were to be required, NG-PON2 or XGS-PON at 10 Gbps or Point to Point 10 Gbps connections or higher could be deployed on an as-needed basis over the proposed Fiber optic cable. Latency within the proposed Adtran FTTH equipment ranges from microseconds to around 3-5ms, depending on location and distance from the master node.

The middle mile architecture for this project will utilize high-capacity transport rings and redundant link aggregation interfaces for a highly scalable and redundant network. The network will utilize a redundant 100 Gbps (scalable to higher speed on some links and lower on others) transport ring comprised of carrier grade ADTRAN and Cisco Ethernet aggregation switches (or equivalent) with full layer 2.5 and MPLS capabilities. Each optical light terminal is connected in a redundant fashion to different parts of the transport ring(s). Redundant core routers, in physically diverse locations, will provide the paths out of the local and middle mile network to the external IXP network. This diverse and redundant pathing of the transport to the interexchange points delivers a robust network that will ensure maximum uptime and minimal latency.

The middle mile / backhaul architecture leverages existing networks, using primarily a Layer 2 architecture. All transport is fiber-based. In the access aggregation portion of the network, individual 10 to 100 Gbps links are aggregated using 802.1ax Link Aggregation and G.8032 Ethernet Ring Protection Switching (ERPS) to interconnect the RTs and connect them to the core network. 100G transport links connect the access rings to the LecNet headend in Jackson, MS. A centralized network operations center (NOC) is located in Jackson, MS and operated by a TEC subsidiary, LecNet. TEC has 100 GB redundant transport routes from the company to the NOC. TEC's Internet peering connections and routers are monitored by the NOC personnel and two upstream providers, Cogent and AT&T, to ensure redundancy and adequate bandwidth and IP addresses are available to our broadband customers. TEC also peers at 350 East Cermak (Chicago) and 56 Marietta (Atlanta) via multiple CSpire 10 Gbps transit links. Additionally, TEC hosts Netflix and Akamai catching servers at the NOC in order to minimize streaming congestion on the network. In total, TEC has 50 Gbps of internet transport and transit bandwidth, with the ability to scale it higher as bandwidth usage grows. This network facilitates excellent response times across the network with minimal latency.

#### **Detailed description of the proposed project:**

The equipment strategy for this expansion project is to leverage existing fiber and continue it to deploy a Gigabit Passive Optical Network (GPON) Fiber to the Home (FTTH) solution using the Adtran TA5000 platform. Customers served by a GPON connection will have a 2.4Gbps/1.2Gbps GPON connection from the Optical Network Terminal (ONT) at their home

through multiple distributed optical splitters to the serving remote Optical Line Terminal (OLT). The Jasper County Community Connect Project will be an extension and upgrade of the current network utilizing the FTTH network design described here. This GPON capacity will easily scale to provide Gigabit service for these customers. However, if more bandwidth were to be required, NG-PON2 or XGS-PON at 10Gbps or Point to Point 10Gbps connections or higher could be deployed on an as-needed basis over the proposed Fiber optic cable. Latency within the proposed Adtran FTTH equipment ranges from microseconds to around 3-5ms, depending on location and distance from the master node.

Contractors will build approximately 79.6 miles of plowed fiber with a 1.25" pipe or directional bored fiber. BST will install and turn up the required electronics, while preselling the service. As services are subscribed, a contractor will then build drop fiber to each location and BST will turn up the service for each subscriber.

The build out timeline and turn up of customers is less than a three-year period for this project. This proposed design will deploy single mode fiber optic cables constructed utilizing RUS approved construction techniques. All the fiber will be buried, aerial or bored and placed in existing previously disturbed public rights-of-ways. To provide a more secure reliable fiber footprint all the buried fiber will be placed at a minimum depth of 36 inches unless other depths are required by the affected highway, railroad, municipalities or other authorities. The two methods of buried construction that will be utilized are predominately plowing with a 1.25" pipe for fiber and directional boring utilized when road or stream or other types of crossings are required. Directional boring will also be utilized when it is not possible to plow or boring is a more feasible construction. Along the buried fiber route, flush-mounted handholes will be deployed with the proposed fiber being accessible at each location. This will allow for easy access to the network and makes future expansions more economical and feasible.

OSP contractors will complete RUS bidder qualification forms and be cleared by engineering to have experience with RUS standards of construction and will construct the middle mile construction. All activity will be supervised by resident engineers and inspectors from Joseph D. Fail Engineering Company (JDFEC), a licensed engineer, a member of ACE, with over 50 years of experience with RUS projects. JDFEC has also reviewed the network diagram and system plan and approved the project.

**Vendors must provide quotes on the entire quantity per material line item, must note expected delivery date, note if material is American made and if vendor is woman or minority owned (manufacturers noted are preferred, but other quality manufacturers will be considered):**

## Request for Proposal for Fiber Construction Materials

Project	Manufacturer	Vendor Part No.	Requirements	Friendly Name	Quantity Needed	Comments
JASPER COUNTY COMMUNITY CONNECT	Corning Optical Communications LLC	012EC5-1410QD53	American Made	Reel - 12 - Ribbon	35278	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Corning Optical Communications LLC	048EC5-1410QD53	American Made	Reel - 48 - Ribbon	135564	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Corning Optical Communications LLC	096EC5-14100D53	American Made	Reel - 96 - Ribbon	159488	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Corning Optical Communications LLC	144EC5-14100D53	American Made	Reel - 144 - Ribbon	106716	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Corning Optical Communications LLC	288EV5-14100D53	American Made	Reel - 288 - Ribbon	4304	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Channell/GlasMasters	Vendor Part No. Varies (Tier 22 Polymer Concrete)	American Made	HAND HOLE 48"X30"X36" SPLIT LID	5	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Channell/GlasMasters	Vendor Part No. Varies (Tier 22 Polymer Concrete)	American Made	HAND HOLE 48"X30"X36"	10	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Channell/GlasMasters	Vendor Part No. Varies (Tier 22 Polymer Concrete)	American Made	HAND HOLE 36"X24"X36"	299	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Channell/GlasMasters	Vendor Part No. Varies (Tier 22 Polymer Concrete)	American Made	HAND HOLE 18"X11"X18"	106	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Preformed	COYTD919R8-000	American Made	Splice Case - PLP - Coyote Dome 919B - 8 Port	284	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Preformed	COYTD928R8-000	American Made	Splice Case - PLP - Coyote Dome 928B - 8 Port	9	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	CommScope	FOSC450-D6-6-NT-0-D3V	American Made	Splice Case - FOSC D	4	Must be delivered by 3/31/23
JASPER COUNTY COMMUNITY CONNECT	Corning Optical Communications LLC	SCA-9T24-086CP	American Made	Splice Case - Corning SCA-9T34 - 8 Port	1	Must be delivered by 3/31/23