



COLORADO

Broadband Office

Governor's Office of Information Technology

Notice

Background. The Broadband Fund is a middle- and last-mile broadband infrastructure grant program overseen by the Broadband Deployment Board within the Colorado Broadband Office in the Governor's Office of Information Technology. All grants are subject to funding availability.

Local Gov't & Incumbents. Broadband Fund applicants must submit their completed application, along with all attachments and exhibits, to (1) local governments with jurisdiction over the area to be served, and (2) to any known incumbent providers in the area to be served. Applicants may contact the Colorado Broadband Office (see "More Info" below) for a list of providers according to self-reported data in the Broadband Coverage map in a proposed project area.

Comment Period. Applications will also be made publicly available on the Board's website. The Broadband Deployment Board will accept written comments on applications during a 45-day comment period. Comments may be submitted by local governments, incumbent providers and the public. Comments received during the 45-day comment period will be considered by the Board when making funding decisions. If an applicant is seeking certification from a local entity that the application area is unserved, the written certification must be submitted to the Board before the expiration of the 45-day comment period.

More Info. Board staff are available to answer questions and receive comments. Please visit <https://broadband.colorado.gov/broadband-deployment-board-fund>, and email oit_broadbanddeploymentboard@state.co.us with any questions you have.

This page is part of the application and must be provided to local governments and incumbent providers along with the following application, its exhibits, and any other documents provided to the Board in support of the application.



Jade Communications
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 Alamosa, CO 81101
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 gojade.org



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Winter 2023 Broadband Fund Application
 Instructions

Submission Deadline. The deadline for applications for the Winter 2023 Grant Cycle is January 15, 2023 (11:59 PM MST).

Submission Requirements. Applications must be received at either the below e-mail or the below address on or by the deadline:

Email* <small>Type text here</small>	Mailing Address
oit_broadbanddeploymentboard@state.co.us	The Broadband Fund Colorado Broadband Office The Governor’s Office of Information Technology 601 E 18th Ave #130, Denver, CO 80203

*Contact staff for alternative submission options.

Electronically submitted applications must be in PDF format. Applicants are strongly encouraged to submit their applications either with read receipt requested (if e-mail) or as certified mail (if mailed).

Complete Applications Required. All applications must be completed in full. The Board reserves the right to reject applications it deems incomplete or partially complete. Applicants who fail to complete any portion of the application run the risk that the Board will reject the application in its entirety or find that there is insufficient information to award the application.

All applicants must provide their text responses within this form. Attaching additional documents is permitted, but applicants should be clear in each response that they are relying upon attached documentation and should cite to specific pages or specific information in such attachments whenever possible.

Applicants are encouraged to use a [dark blue colored font](#) in their response to assist the Board with reading their application.

Public Records. All applications submitted are subject to public disclosure. Board staff, as a matter of course, post all applications to the Board website. In addition, all applications are deemed public records under the Colorado Open Records Act, §§ 24-72-101, *et seq.*, C.R.S. Applicants should not include any



proprietary information, trade secret, or anything confidential in their application.

Preliminary Discussion. Applicants are encouraged to contact Board staff prior to submitting an application to discuss the steps required to complete an application.

Board Policies. Applicants are encouraged to review both the Board’s Grant Award Policy and Appeal Policy prior to applying, as well as all applicable requirements of the grants applied for by the Applicant.

Burden and Standards. Applicants must provide sufficient information to establish all requirements and criteria for fund distribution. Applicants bear the burden of demonstrating that a proposed project meets minimum requirements and, generally, all information demonstrating requirements are met must be contained within the application itself (i.e., there is no second bite at the apple; include all information now or risk needing to wait for a new grant cycle). The Board frequently denies applications for potentially viable projects if the information provided does not show the application / project can be funded under law. Accordingly, applicants are encouraged to provide all information they believe can establish a project satisfies all legal requirements and Board policies (e.g., that an area is “unserved”).

Notice.

- The Board may require additional information as part of the application and grant process.
- Limited funds are available for distribution. Meeting the minimum program requirements does not guarantee the Board will fund the project.
- In making a funding determination, the Board may consider information other than that provided by an applicant.
- Grant agreements are for incremental cost reimbursement during project implementation and upon successful completion. A grantee may not be reimbursed for any expenses made prior to the execution of a grant agreement with the State.
- State law, Office of the State Controller policies, The Governor’s Office of Information Technology policy, Board policy, and the grant requirements of each program govern the awarding of funds. Applicants must read and understand all applicable laws and policies.

Closing Note. It is not the Board’s goal to deny applications. The Board wants to give awards, not deny them. However, please understand the Board (1) is organized and governed by law and must carry out its duties according to the legal standards contained in law, and (2) has limited funding to award.



General Information:

- 1. Name/Title of the project: Jade Communications LLC / Spanish Peaks FTTH
2. Applicant's full legal name: Jade Communications LLC
3. Designated contact authorized to apply on behalf of the Applicant (this person will receive all official communications related to the application):

Name: Josh Wehe
Title: Operations Director
Mailing Address: PO Box 1138
City/Zip: Alamosa, CO
Email: joshwehe@gjade.org
Phone: 719-206-8124

4. Project cost:

Table with 2 columns: Cost Category, Amount. Rows: Total project cost (\$2,024,859.11), Amount of grant funds requested (\$1,518,644.33), Amount of matching funds pledged (\$506,214.78)

5. What are the sources of matching funds: private monies

6. General project area:

- a. The county located in: Huerfano County
b. The municipality located in, if applicable: 12 miles south of La Veta
c. General description of the project and project area: This project will provide multi-gigabyte fiber optic broadband service to 373 underserved addresses in Huerfano County.

Please provide a summary of your project here: (Project summary should be 5-8 sentences detailing the location, number of households, funds requested, total project cost, and type of project being proposed).

This project will provide symmetrical multi-gigabyte fiber optic broadband service to 373 underserved addresses in Huerfano County, namely two subdivisions in the the Cuchara Valley: Spanish Peaks & Cuchara Mountain. This project will cost \$2,024,859.11, with Jade providing 25% of matching funds.

7. In addition to the regular funding stream the Board uses to obligate funding, does the applicant want their project application to be considered for funding under the Broadband Grant Stimulus Program as defined in HB21-1289? *

No, we do not

8. Have you previously applied to the Broadband Deployment Board for this project? If so, please indicate which grant cycle and Board's decision. Also indicate if any updates have

been made to the application since the previous submission.

No, this project has not been previously applied for.

Met Minimum Requirements? Yes

Changes to previously submitted application: n/a

- 9. Have you previously applied to any other State or Federal Programs within the last 24 months? Please indicate below which program, what year and the status of your application.**

No

- 10. Grant applicants should submit a geographic data file representing the address list if possible. Acceptable formats include:**

- a. Geographic coordinates (latitude and longitude) in decimal degrees corresponding to each address in tabular format**
- b. Point file representing each address in a GIS format, including Shapefile, FileGDB, or KMZ.**

We have supplied GPS coordinates for every address served in this project.¹

Service locations

- a. How many households will receive Broadband service resulting from this project?**

373 addresses²

- b. What is the total number of street addresses that will receive Broadband service resulting from this project?**

373 addresses

- c. How many business addresses will receive Broadband service resulting from this project?**

Approximately 25. Notably, this project will bring broadband service to the Cuchara Ski Resort and Cuchara Mercantile, two of the largest business operators in the region.

Opened in 1981 as Panadero Ski Area, the Cuchara Ski Resort had to close in 1992 due to inconsistent snow conditions. Recently resurging as the Cuchara Mountain Park, it has become a regional mecca for mountain bikers, hikers, and other winter adventurers.³ In 2023, it is expected that the lift restoration will be complete and certified by next season. With the ski lift running again, we expect additional demand for upgraded broadband service. As a result, several businesses are opening and expanding in the area (cafes, restaurants, etc.). No doubt, having quality broadband is critical to their success.

¹ All GPS coordinates courtesy of Bing Maps

² We assume 1 household = 1 address

³ <https://krdo.com/lifestyle/2021/01/18/cuchara-ski-resort-closed-since-2001-but-plans-to-reopen-next-season/>



The Cuchara Mercantile is a store, restaurant, hostel, and a conference center. The Mercantile is a critical partner along with the Ski Area for a project with Trinidad State College and Huerfano Economic Development for a satellite class site for trail building and other such classes. The Trail Building class is scheduled for next summer and, in the immediate future, broadband service is critical to its success. It is critical to provide high speed internet to and from the Trinidad State College campus and for students to have good access.

Our network will change lives for the better. All residents will be available to receive timely medical care, including remote patient monitoring, library services, and other services from local businesses in the county. Right now, such services are unavailable to them without a 30-to-45-minute drive.

Secondly, we expect behavior of seasonal homeowners to change as a direct effect of quality broadband. A large majority of these owners will extend their stays in the area because of the improved internet connectivity. Anecdotal information confirms this belief.⁴

It is expected that many businesses and the entire Huerfano County economy will benefit from improved service as work-from-home opportunities will increase dramatically. In response, I expect the actual number of connections could well exceed 100% of what we now have as potential connections.

Lest we forget about remote workers. One recent study says that on average 26% of workers work from home.⁵ We expect that this statistic holds true in the grant area.

In conclusion, we expect our fiber optic network to be the underappreciated engine of economic growth in the area. It's obvious that businesses in 2023 cannot operate without broadband.

d. List the unserved community anchor institutions (schools, libraries, government offices, hospitals, first responders) that will receive Broadband service resulting from your proposed project?

This grant will allow remote library access, remote patient monitoring to the Spanish Peaks Regional Hospital (Critical Access Hospital), and improved response time from first responders. First responders in this area will benefit from improved connectivity and be able to provide better service to this remote and wooded area.

Other regional utilities, such as Cuchara Water & Sanitation, will also receive much improved access.

e. What is the total number of priority “unserved addresses” (i.e., less than 10 Mbps

⁴ Matter of fact, in Conejos Canyon, a DORA funded grant project in 2017, we are seeing people stay at their fishing cabin more because they can work from home. Our infrastructure changes lives.

⁵ <https://www.zippia.com/advice/remote-work-statistics/#:~:text=Due%20to%20the%20COVID%2D19,comes%20with%20plenty%20of%20benefits.>



down and 1 Mbps up) that will receive Broadband service resulting from this project, and what is the source of your data?

CenturyLink is the incumbent provider, and as demonstrated in **Attachment H-A**, their network cannot provide service that meets 25/3. Sadly, most of the anecdotal information is that the service is approximately 10/1. CenturyLink has made no upgrades to their service citizens in the past 10 years.

Satellite service (such as Exede and WildBlue) can provide about 10/1 Mbps service.

f. What is the total estimated population that will receive Broadband service resulting from this project?

Roughly 1,000 people should benefit from this project.⁶

High-Cost Support Mechanism Project Requirements:

1. Describe in detail how your project meets each of the following requirements and the supporting evidence provided as part of this application. Attach supporting documentation and evidence as appropriate to this application and cite that information in your answers (supporting documentation labelled an accordingly). Applicants must provide a full and complete response to address each requirement that appears below.

a. Unserved Area. The proposed project area is either:

- 1. Outside of municipal boundaries or is within a city with a population of fewer than 7,500 inhabitants; and (ii) consists of households that lack access to at least one provider of a broadband network that uses satellite technology and at least one provider of a broadband network that uses non-satellite technology; or**
- 2. Any portion of a state or interstate highway corridor that lacks access to a provider of a broadband network.**

The project area is 12 miles south of La Veta and has less than 7,500 inhabitants. La Veta, the largest city in the region, is home to 811 people.⁷ All 373 potential addresses in the project area lack access to 25/3 broadband. See Attachment **G-a Broadband Insufficient Map**.

See below for map of project map:

⁶ Based on an average of 3 persons/household.

⁷ According to the 2010 Census



- b. The project for which funding is requested must be a new project, and not a project in progress already. A “project in progress” means one in which construction of infrastructure has started. Phased projects may be considered a new project if the phase for which funding is being requested would not otherwise be completed without funding from the Broadband Fund.**

*This project is a new build and **not** in progress.*

- c. Grant funds shall be used for infrastructure deployment only, and not for on-going operating costs.**

We pledge that all funds received will go towards deploying the network.

- d. Matching. The Applicant is providing independent matching funds of at least 25% of the total cost of the proposed project. The Board may allow in-kind contributions to serve as part or all the required independent matching funds. In-kind matching contributions shall not include operational costs.**



We plan to apply at least 25% matching funds, estimated at \$506,214.78

- e. **The proposed project does not “overbuild,” as defined by C.R.S. § 24-37.5- 119(16)(n), meaning the project does not seek to provide broadband to households which:**
 - (i) **have access to a broadband network, (ii) have received federal sources of high cost support, or (iii) have received federal broadband grants for construction of a broadband network that will be completed within twenty-four months after the date that the applicant filed the application;**
 - and**
 - (ii) **Where such households account for 20% or more of the households to be served in the project area by a proposed wireless project.**

With confidence, all 373 addresses in our project area do not have access to at least 25/3 Mbps service. This is most clearly demonstrated in the **EXHIBIT H-A**, which comes directly from the **OIT CO BROADBAND MAP**. In addition, we have supplied maps from the recently produced **FCC National Broadband Map**. From the FCC Broadband Map, the evidence demonstrates that no wired or fixed wireless provider is offering bandwidth higher than 25/3 Mbps.

Our project will not overbuild an existing network according to the definition in §40-15-509(10). There is no provider that accounts for twenty percent (20%) or more total households that are proposed to be served by this project or by a proposed wireless provider that serves more than twenty percent (20%) of the households proposed by this project. The area is primarily mountainous with significant wooded areas that prevent line of sight technology to reach most of the households in this area. Therefore, direct fiber access technology is required. Additionally, this project does not overbuild the area as there is not a provider receiving federal high-cost support or federal broadband grants for construction of a broadband network in the area nor is one expected within 24 months of the date of this application.

There are **no** known providers of broadband in the project area except for an occasional customer using satellite technology.

Jade Communications is an eligible applicant as defined in §40-15-50.5 for grant funding because it has a sufficient business track record to indicate that the applicant’s operations will be sustainable after receiving infrastructure support.

- f. **The Applicant demonstrates to the satisfaction of the Board that the proposed network will meet generally accepted industry reliability standards.**

Our internet access speeds will be symmetrical 100 Mbps, 1 Gbps, and 2 Gbps. As evidenced by our design, **Attachment D – Design**, the network design utilized by Jade Communications for this project is an industry standard type fiber network design based on a Full-Service Access Network (FSAN) 10 XGS-PON network. Finley Engineering



has prepared this network design and has already successfully worked with Jade on existing FTTH deployments. All equipment and materials utilized for this project are from recognized and reputable companies who manufacture equipment to meet legacy telephone equipment reliability standards and are already equipment and material vendors utilized by Jade for other FTTH deployments.

- g. The applicant demonstrates to the satisfaction of the Board an ability to deliver on the proposed project within established timelines and within budget, and to complete the project no more than two (2) years from the date in which the grant award contract is executed.**

We are confident we can deliver this project on time and within budget. Case in point, in the past four years, Jade successfully completed fiber-to-the-home projects in San Luis, La Jara, La Veta, Center, Alamosa, Antonito, Hooper, Mosca, & Conejos Canyon, CO. On every occasion, Jade has remained near the budget and started the connection of customers ahead of the schedule project due dates. Some examples:

In addition, in 2019, Jade won and completed two DORA Broadband Fund grants (Riverdance Ranch & San Antonio). Both projects were completed on time and under budget.

In 2020, we won another DORA Broadband Grant, this time for Hwy 12 Corridor. This project did see some delays and did come in slightly over budget. These issues were mainly due to the COVID19 supply chain pandemic.

We anticipate this project will be managed to the same metric and to come in near budget and be completed before the August 1, 2025 deadline.

See Provider Information, section 5 for previous Jade FTTH deployments.

- h. The Applicant demonstrates to the satisfaction of the Board the ability to operate the network as proposed for a minimum of five (5) years following project completion.**

Jade Communications has been a provider of broadband internet, voice, and TV services to the San Luis Valley and southern Colorado since 1990. Since our inception, Jade has aggressively expanded its broadband network and service area to almost 4,200 square miles. Jade is the *only* internet service provider to cover the San Luis Valley end to end, which encompasses five counties and twenty-five communities. Additionally, Jade has expended its footprint to Huerfano County and the town of La Veta. Every year, Jade continues to gain broadband subscribers and has long term plans to continue to make significant investments into our network, whether that be fiber to the home buildouts, installing fixed wireless equipment, or upgrading to the latest backhaul, routers, and switches. Furthermore, Jade provides broadband service to a large swatch of community anchor institutions, such as school districts, hospitals, governmental agencies, county courthouses, and small businesses.

- i. The applicant shall demonstrate to the satisfaction of the Board an ability to provide**



broadband service at a reasonable cost per household and at reasonable service costs to end users in the area to be served.

The total project is expected to cost \$2,024,859.11, thus bringing the cost/address to \$5,428.58.

373 addresses will be served.

Our pricing to the customer for broadband service is as follows:

Residential:

- 100 Mbps down / 100 Mbps up - \$55/month
- 1 Gbps down / 1 Gbps up - \$80/month
- 2 Gbps down / 2 Gbps up - \$125/month

Commercial:

- 25 Mbps down / 25 Mbps up - \$60/month
- 50 Mbps down / 50 Mbps up - \$70/month
- 100 Mbps down / 100 Mbps up - \$90/month
- 1 Gbps down / 1 Gbps up - \$500/month

See below for monthly-recurring and non-recurring costs:

- There is *no* up-front cost to the customer. Jade will bury the fiber drop to the customer's house, mount, purchase, and splice the ONT, and turn-up customer at its sole expense.
- There are no contracts (month-to-month)
- There are no hidden fees
- There are no early termination fees
- All equipment is included in the cost of service.
- If the customer wants to put their service on "vacation mode," it is \$20/month.
- If the customer has a phone line and elects to put the phone line on "vacation mode" and desires to keep the same phone number, Jade charges \$10/month to reserve the phone number in its soft switch.
- Jade offers 24x7x365 customer and technical support.
- At the same time, Jade offers VoIP phone service at \$25/month that includes voicemail, unlimited long distance in the continental United States, and Caller ID. Jade can port CenturyLink phone numbers.



- Jade Communications offers static IPs for customers who desire it at \$10/month per IP address.

j. The Applicant demonstrates to the satisfaction of the Board that the project is not in an area with a population density large enough to require service under an existing franchise agreement.

No franchise is required for this project since all addresses lie within Huerfano County right of way.

k. Build a chart detailing every standard service package tier to be offered. The list must include, at a minimum, the following for each service package tier:

1. Bitrate (download and upload)
2. Usage limits (if any),
3. Total upfront cost
4. Itemized list of all upfront costs (e.g., onetime - fees, installation costs, fiber drop to the premise, customer premise equipment costs, etc.)
5. Total monthly cost
6. Itemized list of all monthly costs (e.g., recurring - service cost, fees, customer premise equipment leases or installments, etc.)

Residential Internet:

- 100 Mbps down / 100 Mbps up - \$55/month
- 1 Gbps down / 1 Gbps up - \$80/month
- 2 Gbps down / 2 Gbps up - \$125/month

Commercial Internet:

- 25 Mbps down / 25 Mbps up - \$60/month
- 50 Mbps down / 50 Mbps up - \$70/month
- 100 Mbps down / 100 Mbps up - \$90/month
- 1 Gbps down / 1 Gbps up - \$500/month

See below for monthly-recurring and non-recurring costs:

- There is *no* up-front “installation” cost to the customer. Jade will bury the fiber drop to the customer’s house, mount, purchase, and splice the ONT, and turn-up customer at its sole expense.
- There are no contracts (month-to-month)
- There are no hidden fees
- There are no early termination fees



- All equipment is included in the cost of service.
- If the customer wants to put their service on “vacation mode,” it is \$20/month.
- If the customer has a phone line and elects to put the phone line on “vacation mode” and desires to keep the same phone number, Jade charges \$10/month to reserve the phone number in its soft switch.
- Jade offers 24x7x365 customer and technical support.
- At the same time, Jade offers VoIP phone service at \$25/month that includes voicemail, unlimited long distance in the continental United States, and Caller ID. Jade can port CenturyLink phone numbers.
- Jade Communications offers static IPs for customers who desire it at \$10/month per IP address.

m. Provide a list of all parties that were given a copy of this application, including all attachments, and the date which it was provided to them. (You are required to submit this application including all attachments and exhibits to the Board of County Commissioners, City Council, or other local entity with authority over the area to be served; and the incumbent provider(s).

Copies of this grant were provided to:

- Huerfano County Economic Development
- Huerfano County Commissioners Office
- CenturyLink/Lumen (incumbent carrier)

High Cost Support Mechanism Questions

1. Why is this project needed at this time? Please include an explanation of why you believe state funds are needed more in your project area than in other unserved areas of the state.

It’s fitting that Huerfano County has long been broadband starved; after all, Huerfano is Spanish for “orphan.” It has been left behind by big providers, such as CenturyLink, Charter, and Comcast. At the ACTION 22 Rural Broadband Summit in March 2018, Jade was approached by several Huerfano County officials. They inquired about how to solve the lack of adequate broadband availability in Huerfano County; they identified Spanish Peaks as the area where broadband is needed most and thus as their highest priority.⁸ Without broadband access, the Spanish Peaks community will continue to be underserved and economically depressed.

The demand for broadband became even more urgent after the devastating impacts on the economy of the 2018 Spring Fire, which burned almost 160,000 acres and was the 3rd largest wildfire in Colorado State history. The fire deeply exposed the absence of broadband service. Case in point, the La Veta Fire Protection District, which served as headquarters for the firefighters and other first responders during the Spring Fire, desperately called Jade, asking for a high-speed connection. Their current provider, CenturyLink, did not have the capacity to accommodate high speed connection the first responders needed. Our team pulled an immediate, overnight install and provided 100 Mbps fiber connection for first responders.

⁸ In a meeting with Huerfano County officials on April 26, 2018



Since Jade already operates a fiber to the home network in La Veta and in neighboring Cuchara, it makes the most fiscal and operational sense for Jade to build-out to Spanish Peaks; after all, we have fiber optic facilities roughly 3300 feet away from the first house in Spanish Peaks.

For the last five years, Jade Communications has provided fiber to the home transport and distribution fiber connections to La Veta, CO. Given the fact that CenturyLink continues to marginalize the Spanish Peaks community with less than a 10 Mbps connection, residents, community members, and business owners have repeatedly approached Jade about providing broadband services in Spanish Peaks. On top of that, Spanish Peaks is experiencing a surge of residents and commercial citizens due to the close availability to world-class hiking, fishing, fly-fishing, and other summer, and winter outdoor activities. As one Huerfano County official told Jade, “If there was high-quality broadband service, Spanish Peaks would see more year-end residents and additional businesses pop up.”⁹ Access to high-speed broadband is imperative and necessary to attract more businesses and residents to this area year-around to catalyze economic development. Not to mention that every single Huerfano County official and economic plan lists better broadband as a pressing need.

Suffice it to say, this project fills a desperate and depressed need in the community. Economic development is being stalled by the poor internet service CenturyLink currently provides. Businesses revenues are being lost due to the inability to do basic business transactions, such as chip credit card purchases or other expansion opportunities. Several businesses are cash or check only due to the lack of adequate telecommunications technology. New property is not being purchased primarily due to the lack of internet access for home businesses or work from home opportunities. Spanish Peaks offers significant opportunity from work at home applications or home-based businesses based on the occupations of many current property owners. All in all, Spanish Peaks is suffering due to lack of broadband access.

On top of this, CenturyLink does not possess the necessary infrastructure to provide DSL service to *new* customers. Their lines are, according to one CenturyLink representative, “in exhaust.”¹⁰ Existing CenturyLink customers in this area receive, on a good day, 1 Mbps; on most days, speeds are less than 0.5 Mbps. New, state-of-the-art broadband infrastructure must be introduced to provide better, faster broadband service to this region.

From another angle, Huerfano County has one of the highest unemployment rates in the state and a disproportionately higher percentage of citizens over the age of 60. Quality broadband service increases job opportunities and allows citizens with opportunities to engage in the work from home economy and limited mobility to the services they need.

Therefore, our project will provide all residential and commercial customers with at least a 100 Mbps service and up to 2 Gbps service, far above the FCC desired minimum of 25 Mbps down and 3 Mbps up.

⁹ John Galusha, Huerfano County Official on a meeting with Jade Communications director of operations Josh Wehe on April 26, 2018. Multiple undocumented conversations have also been had with Huerfano County officials.

¹⁰ A new customer, using one the 387 addresses, called CenturyLink on June 18, 2018 requesting new internet service. The CenturyLink representative said that the maximum speed available in this area is 10 Mbps download speed.

2. How does the proposed project address the needs of the community that will receive service?

At the present time, Spanish Peaks has little to no broadband access.¹¹ We plan to build the last broadband network Spanish Peaks will ever need. The lack of modern infrastructure affects everyone living in the area, from residents, businesses, community anchor institutions, and first responders. For example, landowners who rent their homes online, using services such as Airbnb and VRBO, must embarrassingly turn away potential business because their home doesn't have good internet or phone access. Small businesses do not have necessary processing power to facilitate growth and process credit cards, equating to revenue loss. First responders do not have the network they need to protect and respond quickly to fires, floods, and other emergencies.

We want to reiterate two forces exposed the need for broadband in this region: the 2018 Spring Fire and the COVID pandemic. Community anchor institutions, such as churches, courthouses, and county administration buildings have to rely on an insufficient connection to download and upload data to state and federal servers. During the height of the busy summer season, businesses are jam-packed with tourists and adventure enthusiasts and, currently, these businesses *do not* possess the necessary broadband connections to conduct business in the 21st century. Lastly, residents who work from home cannot video conference, dial into VPNs, etc. As a result, the absence of robust broadband service is stagnating further economic development.

At the same time, residents are severely frustrated with their current broadband connection. To a huge degree, the lack of a modern broadband infrastructure lowers the quality of life for residents in the valley. With their current CenturyLink connection, Spanish Peaks residents *cannot* stream video, such as Netflix, Hulu, or YouTube, download high amounts of data, connect to VPN tunnels, or video conference with loved ones (Skype & Facetime), let alone work remotely. Most alarming is the that no broadband access minimizes telehealth opportunities.

Our project intends to solve this gross once and for all. The investment in fiber-based broadband is an investment in network infrastructure that is a long-lived asset as compared to other broadband infrastructure, especially compared to the existing copper-based network which has already been in place past its economic and useful life.

3. If you have considered implementation options other than what is proposed in this application, describe all other options and why they were not chosen.

Any project should solve the connectivity gap *once and for all*. To do right, the only way is to build an underground fiber optic network that can provide multi-gigabyte service to every address.

To provide a minimum 25 Mbps down / 3 Mbps up broadband service to these communities, there are two possible solutions: a fixed wireless network or a fiber-to-the-home network. It will become clear that a fiber-to-the-home network, though more initially capital intensive, is the preferred and *only* solution to provide broadband service to this region. Fiber solves the problem, once and for all. For some of argument, we considered a fixed wireless network.

¹¹ Exhibit H-A



Without a doubt, a fixed wireless network would be the most cost-effective solution. A fixed wireless network requires a tower with access points, subscriber modules to fix to the subscriber’s home, and backhaul to transport the traffic back to the core network. It is *necessary* that the customer have a clear line-of-sight to the tower; without line of sight, it is not a reliable service.¹² A fixed wireless network can, at optimal network conditions, provide a maximum of 25 Mbps download / 3 Mbps upload to each subscriber. Fixed wireless *cannot* scale to 1 Gbps services.

However, due to the topographical and geological features of this area, a fixed wireless network will not work for three reasons: 1) the large majority of homes are hidden in trees, thus obstructing their line of sight to the tower(s), 2) there are no bluffs or vistas where (multiple) towers can be constructed,¹³ 3) we would have to construct four to five towers in the valley just for backhaul alone. In the end, a fixed wireless broadband solution is not a smart nor effective solution, due to the unique geography of the canyon the dense forest that obstructs line of sight from customer’s homes.

Therefore, a fiber-to-the-home solution is the best solution for four reasons. First, broadband speeds are much faster and more reliable¹⁴ on a fiber network; fiber allows customers 10 GB full duplex capacity. Secondly, a fiber solution overcomes line of sight; it is irrelevant if the customer lives at the bottom of the canyon or surrounded by towering trees. Thirdly, a fiber broadband investment has a much longer life than a fixed wireless or copper investment. Fourth, a fiber connection is more cost effective for the customer, in terms of cost/Mbps.

Jade’s Fiber Network – Price / Mbps/Residential

Speed	Monthly Price	Cost / Mbps
100	\$55	\$0.55
1000	\$80	\$0.08
2000	\$125	\$0.06

4. Is completion of the project dependent on the award of the entire requested amount of grant funds? If not, what is the minimum amount of grant funds you require to complete the project?

Project success is wholly dependent on grant funds. If grant funding is not received, Jade will not be able to provide service to these communities due to the substantial capital necessary for build out.

Jade will match 25% of the total project cost. See **Attachment B-Budget**.

¹² Though there is some effort in the wireless broadband community to overcome poor line of sight, especially using the 900 MHz and 3Ghz CBRS spectrum, the technology is not quite there to deploy at 25 Mbps down / 3 Mbps up. Not to mention, fixed wireless will never be able to provide gigabyte symmetrical services. Therefore, fixed wireless will not work in Spanish Peaks project area.

¹³ Multiple towers would be necessary to backhaul traffic through the canyon. Each tower is estimated to cost \$250,000. On top of that, there is no power available at any of these potential tower sites. Electricity is needed to run switches, routers, and other fixed wireless broadband transmission equipment. Even if areas were available to construct wireless backhaul towers, the cost for carrier-grade backhaul radios would usurp the cost of a fiber network. Moreover, a fixed wireless network has a smaller investment lifetime than a fiber-based investment.

¹⁴ Fiber optics generally operate at 99.9999% availability, whereas fixed wireless, at best, is 99.99% availability.



5. If you are not awarded funds for this project, do you have plans to complete it using other funding sources? If yes, please describe your plan and the source of the funds.

While Jade would like to expand broadband service into Spanish Peaks, the viability of the project without grant funding is severely limited. Jade will delay investment in this area for some time due to the lack of financial viability of the project.

6. Does the project address a need as identified in a local or regional broadband plan? If yes, please explain and attach a copy of the plan.

The Huerfano Economic Development Council has identified the lack of broadband as *major* issue in their ability to attract employers/employees, increase residences, and, in short, improve their economy. Huerfano County is arguably one of the poorest counties in the state and does not have the resources or ability to produce these sorts of resources without a state grant. Broadband to this community won't happen without assistance.

In the Comprehensive Economic Development Strategy for Huerfano County, page 40 indicates broadband access as a *major* weakness of the county. It reads, "Speeds in Huerfano County range from 4 Mbps down and 0.5 Mbps up in La Veta to 12 Mbps down and 2.2 up in Walsenburg. Businesses in Spanish Peaks reported difficulty processing credit cards during the busy summer season due to inadequate connection speeds."¹⁵

The Raton Basin RED Plan has as Goal #6, technology. It says, "expand region wide broadband availability by 20% by December 31, 2014 and maintain state of the art connectivity and communications . . . to collaborate with broadband providers to expand services throughout the region."¹⁶ It is 2019 and broadband service has not been expanded.

We have attached both the RED Plan & Economic Development Strategy for Huerfano County.

Applicant Project Information:

- 1. Design:
 - a. **List and describe in detail the infrastructure and technologies that will be deployed. Include, at a minimum, the following applicable items in your list and description:**
 - i. **Last mile infrastructure and technology**

Jade intends to build a fiber to the home (FTTH) network utilizing various fiber cable sizes and 1 passive splitter cabinet. The active remote cabinet is already in production.

Specifically, the FTTH network design already completed includes the following fiber cable sizes: 12, 24, 48, 72, 96, 144, 192, and 288 fiber optic cable, with final design level lengths of cable required for this project included in

¹⁵ See page 40, CEDS
¹⁶ Raton Basin RED Plan



Attachment D – Engineering Design & Permits.

All mainline fiber cable will be undergrounded, encased in conduit, and installed using various methods: vibratory plow, directional boring, and trenching. All splice points for mainline cable and service drops will be made inside handholds in Huerfano County Right-of-Way. Marker posts will be placed at all handhold locations to indicate cable below. All four strand service drops will be from the nearest hand hole to the customer premise and will be made via small vibratory plow; new service installations typically occur within seven days of request of service; allowances for this target installation window will be made for weather incurred delays.

Jade utilizes the Calix AXOS platform for its fiber network architecture. With a XGS-PON network, a Passive Optical Network (PON) splitter is required to divide and combine optical signals per the FSAN standard. Per the engineering design, this project requires 1 splitter cabinet, designed to be placed in each PON splitter cabinet to accommodate the demand for broadband service achieved by Jade.

All Optical Network Terminal (ONT) installations, at broadband customer's locations, will be completed by Jade's staff.

ii. Middle and backhaul infrastructure and technologies

Jade operates an existing fiber optic electronics system near Cuchara, roughly 1.5 mile north of project area. There, we already have in service a fully functional Calix XGS-PON system. We intend to dedicate transport fibers from the Cuchara active remote to the Spanish Peaks splitter cabinet, which then would be able to provide service to customers in the project area.

We plan to install 2" conduit everywhere in the project area. Duct protects the fiber as well as give us extra pipe in the rare chance we need to pull more fibers through later.

Jade will utilize redundant 10 GB optical connections to accomplish middle mile. With hardened, carrier-grade class switches at the La Veta Remote and the Cuchara Remote, we will establish 10 Gb transport between each remote.

b. Describe the scalability of the network and system elements to meet demand in excess of forecasts (e.g., how will you handle a larger than anticipated number of subscribers).

The proposed network is designed to accommodate a 125% take-rate. Our electronics and fiber capacity will handle more traffic than expected. The network build-out includes 10 GB capacity transport, with easily scalability to 40GB/100GB backhaul. We expect the 10 GB to be enough capacity for the next 5-7 years, at the very least. In the case that the 10 GB pipe is filled, we will have to replace 10 Gb optics with 40 Gb or 100 Gb optics.

- c. **List identified risks to a successful project and describe how you will mitigate those risks.**

The largest risk is financial during construction. Being that these communities are in the mountains, contractors may hit more rock/slate/cobble than expected when burying conduit. There is, sadly, no way to anticipate when this will occur. When rock is hit, the cost/foot of cable installation skyrockets.

- d. **If you are using wireless technology, list the spectrum used, where in the network it is used (e.g., last mile, middle mile), whether it is licensed or unlicensed spectrum and if it is licensed whether or not you have a current or pending license to utilize that spectrum.**

No wireless technology will be used in this project.

- e. **List all land, easements, right-of-way, and buildings that are to be utilized, acquired or leased as part of the project and the status of any acquisitions or leases. Identify which property rights are public rights-of-way versus non-public property interests.**

The only right of way permits that will be necessary will be from Huerfano County Land Use. Jade has successfully worked with Huerfano County to secure right of way permits in the past and does not foresee any difficulty.

- f. **Answer the following questions for the backhaul – the portion of the network comprises the intermediate links between the core network, or backbone network and the small subnetworks at the "edge" of the entire hierarchical network:**

- i. **Is there redundancy? If yes, please explain.**
- ii. **Is there physical diversity? If yes, please explain.**
- iii. **What is the capacity of each link?**
- iv. **Do you have the ability to increase capacity? If yes, please describe how you would accomplish the increased capacity and the timeframe to complete.**

Just west of La Veta we have a network POP site that has a 20 GB feed. From there, we run 2 10GB fibers to our Cuchara POP site, 12 miles south of La Veta. At this Cuchara POP site is where the electronics are that will feed this project.

Due to the terrain, we do not have physical diversity. We do account for fiber diversity (2 fiber pairs in a lag group).

In our electronics, scalability is easy. In the Calix XG801 OLT XGS-PON line card, there are 10Gb, 40Gb, or 100Gb ports. If additional capacity is needed, all we have to do is purchase a 40Gb or 100GB transceivers.

- g. **Answer the following questions for the middle mile - the segment of a telecommunications network linking a network operator's core network to the local network plant:**

- i. **Is there redundancy? If yes, please explain.**
- ii. **Is there physical diversity? If yes, please explain.**
- iii. **What is the capacity of each link?**

- iv. **Do you have the ability to increase capacity? If yes, please explain how you would accomplish the increased capacity and the timeframe to complete.**

Just west of La Veta we have a network POP site that has a 20gb feed from the core. From there, we run 2 10GB fibers to our Cuchara POP site, 12 miles south of La Veta. At this network side is where the electronics are that will feed this project.

Due to the terrain, we do not have physical diversity. We do account for fiber diversity (2 fiber pairs in a lag group).

In our electronics, scalability is easy. In the Calix XG801 OLT line card, there are options to use 10Gb, 40Gb, or 100Gb ports. If additional capacity is needed, all we have to do is purchase either 40Gb or 100GB transceivers.

2. Service

- a. **List the network availability and reliability standards used in the design of the proposed project.**

Our network will be available to every address/household within in the grant region. As indicated by **Attachment D – Engineering Design**, every structure has a “drop” already planned.

As for network reliability, Jade is proud to be the most reliable network in southern Colorado. Our network operates at 99.999% uptime. We monitor every switch 24x7x365 and have every component of our network on redundant battery back-up.

- b. **List all monitoring tools and methods that will be deployed to ensure proper network performance.**

Every ONT in the field is monitored 24/7/365 through multiple network monitoring tools. Any time an ONT goes offline, it will send an email alert to network technicians within one minute.

Every fiber, every switch, and every switch interface are also monitored 24/7/365 with network monitoring software. If a technician needs to be dispatched, we have a response time standard of less than one hour.

- c. **Is the network capable of providing real-time communications?**

As emphasized in 3b above, our network provides real-time communications. All network technicians are notified within one minute of an outage, whether it is an ONT or a network node going offline.

- d. **Provide all proposed terms of service, including any required minimum contract term, customer service hours, additional fees and any early termination fees.**



- There is *no* up-front cost to the customer. Jade will bury the fiber drop to the customer’s house, mount and purchase the ONT, and turn-up customer at its sole expense.
- There are no contracts (month-to-month)
- There are no hidden fees
- There are no early termination fees
- If the customer wants to put their service on “vacation mode,” it is \$10/month/service.
- If the customer has a phone line and elects to put the phone line on “vacation mode” and desires to keep the same phone number, Jade charges \$10/month to reserve the phone number in its soft switch.
- Jade offers 24x7x365 customer and technical support.
- At the same time, Jade offers VoIP phone service at \$25/month that includes voicemail, unlimited long distance in the continental United States, and Caller ID. Jade can port CenturyLink phone numbers.
- Jade Communications offers static, public IPs for customers who desire it at \$9.99/month per IP address.

e. What is the anticipated take rate, for each service package tier offered, for each of the first five years of operation?

1. How will service be affected if take rates are higher than anticipated?

We have met with significant stakeholders to generate incredible interest in this project. Therefore, we expect a large take-rate after the deployment. We expect 75% of available customers to take our internet service within five years, which is close to 280 homes.¹⁷ Of the 280 (75% take rate) anticipated homes, we predict 120 to take the 100 Mbps package, 157 for the 1 Gbps package, and 3 for the 2Gb package.¹⁸ We also anticipate to carry 100 voice lines, at the minimum.¹⁹ This model is based on current customer take rate in our current markets. **Attachment E – Operational Plan** indicates that this network will be profitable.

Given Jade’s connections with influential community stakeholders and augmented by the fact the incumbent provides is atrocious and does not meet today’s broadband needs for either businesses or residents, we are confident that the take-rate will be higher when compared to take-rates of other fiber builds in other communities. We expect to be *the* trusted broadband, voice, and TV provider to these communities for generations to come.

In the unexpected case that the take rate changes, we will have to find ways to recover our build-out cost. We will increase our sales force by double-downing on marketing and advertising efforts and increased marketing and publicity.

In the case that the take-rate is higher than projected, the FTTH network planned for

¹⁷ On **Attachment B, Project Budget**, you will find that we included 280 ONTs and 280 customer turn-ups into budgetary considerations.

¹⁸ In our current FTTH markets, 42% take 100 Mbps, 57% take the 1GB, 1% for 2Gb. 2Gb was announced in late 2022, so we expect that product to begin growing as it matures in the marketplace.

¹⁹ There is no cell phone service at all in the Cuchara Valley. As a result, we expect a 33% of subscribers to purchase a landline



Spanish Peaks is designed and capable of supporting 100% take rate from customers. The network design also accommodates future growth in the network. Service will not be impacted if take-rates are higher.

Provider Information:

1. When was your business established?

Jade Communications was founded in 1990 originally as a cable TV provider. Soon thereafter, seeing the need to provide broadband services to the San Luis Valley, we began offering broadband services in 2000. Since then, we have become the leading regional broadband provider to schools, libraries, local businesses, county and city administration facilities, and residents in more than twenty-five communities in the San Luis Valley.

Our service area covers the large majority of the San Luis Valley and southern Huerfano County and six counties (Conejos, Costilla, Rio Grande, Alamosa, Huerfano, & Saguache). We operate close to 1,400 miles of lit fiber, 20 towers to provide fixed wireless broadband service, and a service area of 4,200 square miles, roughly the size of Massachusetts. In 2015, Jade began providing transport and Ethernet circuits to cell carriers as a member of the Colorado Fiber Network.

Jade has at least gigabyte fiber capacity to over ½ of the towns in the San Luis Valley and neighboring communities in southern Colorado:

- Blanca
- Ft. Garland
- La Jara
- La Veta
- Alamosa
- San Luis
- Wagon Creek Ranch
- Forbes Park Ranch
- Antonito
- Center
- Conejos
- Fox Creek
- Cuchara
- Pine Haven
- Mosca
- Hooper
- Mogote
- Bear Creek
- Sheep Creek



2. Are you registered with and in good standing with the Colorado Secretary of State?

Jade Communications is in good standing with the Colorado Secretary of State.

3. Describe the types of goods and services offered by your business.

Jade Communications provides the following services: fiber to the home internet, fixed wireless internet, point to point broadband service, Ethernet transport services, VoIP services, and residential home security.

4. Provide the names and titles of all officers and executives.

Josh Wehe, Operations Director
Jordan Wehe, Marketing Director

5. Have you completed an infrastructure project of a similar type, size, and scope using the technology proposed in this application?

- a. **If yes, please describe at least one example.**
 - i. **Was the project completed on time?**
 - ii. **Was the project completed within budget?**

Past fiber to the home (FTTH) project history:

- a. In 2022, Jade began construction 6 months ahead of schedule on a fiber to the home network in city limits of La Veta, CO. Currently it is 83% built, 6 months of ahead of schedule.
- b. In 2021, Jade completed FTTH project to 900 homes in Center, CO in Rio Grande/Saguache counties. This project was completed ahead of time and within budget.
- c. In 2020, Jade won and completed a DORA Grant (Hwy 12 Corridor) in Huerfano County. This project was completed on time but did come in over budget due to COVID-19 supply chain issues. In the end, homes were served as promised.
- d. In 2019, Jade won and completed two DORA grants (Riverdance Ranch & San Antonio). Both projects were completed under budget and customers were connected promptly. Close to 100 homes are now eligible for gigabyte broadband service due to these grants.
- e. In 2018, Jade Communications exploded with its largest network expansion yet as it plowed almost 150 miles of mainline fiber. We completed fiber to the home in Antonito, CO near budget and before its due date. On top of that, we deployed gigabit services to Alamosa and did FTTH to several communities in Alamosa County. Following that, we were awarded a \$2.3 million DORA grant to construct a fiber network in Conejos Canyon to provide gigabit fiber service to 900 addresses.



- f. In 2017, Jade completed a fiber to the home build in La Jara, CO, bringing fiber optic broadband access to 475 residential and commercial addresses. We completed the project two months ahead of schedule and 10% under budget.
 - g. In 2017, Jade also started an ambitious fiber to the home build to south and east Alamosa, bringing fiber optics to over 1,500 residential and commercial addresses. We received permits three months ahead of schedule. Again, we finished the project under budget and weeks ahead of expected due date. Customers were turned up two months ahead of schedule.
 - h. In 2016, Jade completed fiber to the home build in San Luis, CO, the oldest town in Colorado. Every commercial and residential address within city limits, roughly 373 addresses, has access to a fiber optic gigabyte broadband connection. Again, we completed the project one month ahead of schedule. We began in June and had all facilities buried by August. Drops and customer turn-up finished by September 2016.
- 6. Do you currently provide similar service to that proposed for this application (same technology, speeds, etc.)? If yes, how long have you been providing that service and where is it provided? If not, please describe how you will ensure the service is provided as stated in this application.**

Currently, we provide fiber to the home broadband service in La Veta, homes south La Veta and Cuchara using XGS-PON technology. We offer the same speeds there as advertised in this build (100 Mbps, 1 Gbps, and 2 Gbps symmetrical).

- 7. Have you operated in or near the geographic area to be served? If yes, please describe the area(s).**

We have operated in the Cuchara Valley for 1 year and the greater La Veta area for 3 years.

- 8. If you have filed for bankruptcy in the past five (5) years, please describe the reasons for the filing and the plan to exit bankruptcy. After reviewing your summary, the Board may require additional information and documentation.**

No

- 9. If you have any outstanding judgments or lawsuits, describe each. After reviewing your summary, the Board may require additional information and documentation.**

No

- 10. Have you submitted coverage data to the Office of Information Technology in the past year?**

Yes, we submit data 2x/year to OIT



Required Attachments:

- A. List of all addresses served by your proposed project. The list must be submitted electronically in an unlocked MS Excel file and be on the form provided by the Board.**

See [Attachment A - Addresses](#).

Our project will serve 373 addresses in Huerfano County.²⁰ Column J lists the physical address.

Additionally in Attachment A, please find GPS coordinates of every address.

- B. Project budget. The budget must be submitted electronically in an unlocked MS Excel file and be on the form provided by the Board. You must provide supporting documentation for each line item (e.g., cost sheets and estimates). If any portion of the project funding is coming from a third party, describe the requirements and limitations of that funding (e.g., third party grants requirements, loan conditions, etc.) electronically in MS Office or PDF formats.**

See [Attachment B - Project Budget](#).

- C. A network or system map, such as a system block diagram or flow chart that includes each infrastructure and technologies listed in question 2. a. of the Project Information section. Provide all documents electronically in MS Office or PDF formats.**

See [Attachment C - Network Map](#). Green indicates *new* facilities and *blue* represents existing facilities.

- D. Design Plan and Documentation. Provide all documents electronically in MS Office or PDF formats.**

- a. All engineering and consulting reports used to design the proposed broadband network.
- b. FCC licenses or license application if the license is pending
- c. Local permits or permit application if the permit is pending

See [Attachment D - Engineering](#) documents from Finley Engineering. Please find our FSAN FTTH design and a Bill of material.

- E. If you are providing bandwidth (speed) tests as supporting evidence for your application, please include the following information for each test submitted:**

- i. Bandwidth (speed) test provider/vendor
- ii. Download bandwidth (speed)
- iii. Upload bandwidth (speed)
- iv. Latency
- v. Address where the test was taken
- vi. Time and date of the test

²⁰ All addresses are courtesy of Huerfano County Assessor's Office. Addresses collected December 27, 2022.

- vii. Internet provider
- viii. Service level subscribed to
- ix. Highest service level offered at the address of the test
- x. Whether the device where the test was completed was connected via wired or wireless connection to the modem.

Since there is not an existing provider offering more than 25/3 Mbps service (See Attachment H-A), it is not necessary to provide speed tests.

- F. Project Plan - List and describe in at least three sentences all project milestones, anticipated completion dates and the party responsible for completing the work. The Project Plan must be submitted electronically in an unlocked MS Word file and be on the form provided by the Board.**

See attached for [Attachment F – Project Plan](#).

- G. Submit your operational plan in spreadsheet format. The spreadsheet must contain an operational plan for the five years after the project is complete. If your company does not utilize the same line items in its forecasting as shown below, then you may use your company’s own line item with an explanation or definition of the metric in the Assumptions section. Your spreadsheet must include the line-item projections below, as modeled on at least an annual basis, with monthly or quarterly projections preferred.**

- a. Subscriber Metrics
 - i. Gross Adds
 - ii. Churn
 - iii. Net Adds/Customer Base
- b. Revenue
 - i. Recurring revenue from service fees
 - ii. One-time revenue (e.g., from upfront fees)
- c. Expenses
 - i. Customer acquisition (e.g., advertising, commissions, and installation, if expensed)
 - ii. Network operations and maintenance
 - iii. Fiber and other third-party costs
 - iv. Customer support costs (support, billing, payments, service calls)
 - v. General and administrative expenses or other expenses not captured above
- d. Ongoing Capital Investment (e.g., customer premises equipment, if capitalized)
- e. Assumptions used in the model
 - i. Provide an explanation or definition for each line item
 - ii. Provide a list of assumptions used in your model (e.g., maximum capacity per sector, shared resources with other parts of your business)

The Broadband Fund Grant Application Attachment F - Operational Plan is an example of an operational plan that met the requirements of this section. You must provide all documents

electronically in MS Office or PDF formats. You may use the optional operational plan template (Attachment F) or provide the operation plan in another format as long as it includes, at a minimum, all of the required information listed.

[See Attached Exhibit G – Operational Plan.](#)

H. Maps. Each map (a, b, c, d, and e) must clearly cite the source data and assumptions used. Provide all maps electronically in PDF and GIS [shape] file formats. You must provide each of the following maps:

a. A map demonstrating the insufficient availability of broadband service (25/3Mbps) in the proposed service area.

[Collected on December 27, 2022, from the State of Colorado OIT Broadband Map, this shows that this area lacks the minimum 25/3 Mbps broadband. No provider can do 25/3 Mbps service at this time.](#)

[Collected on January 11, 2023 from the FCC National Broadband Map:](#)

- [A map of wired services at maximum 25/3 Mbps service](#)
- [A map of fixed wireless at maximum 25/3 Mbps service](#)
- [A map of fixed wireless and wired services at maximum 25/3 service](#)

b. A map showing the highest service speeds you currently provide in the project area (prior to project implementation).

[See Prior to Completion Attached. Jade does not provide any broadband service in this region now.](#)

c. A map showing the highest service speeds you plan to provide in the project area (post project completion). If service availability or service level (e.g., speed, latency) is not uniform across the entire service area, you must show which areas will receive what service (e.g., speed, latency). If the technology used results in varied or degraded signal strength, you must show the assumptions made on the map and explain why the assumptions are appropriate.

[See Post Completion Attached. Every address will be multi-gigabyte eligible. Blue indicates multi-gigabyte coverage.](#)

d. A map showing the wireless propagation, if using a wireless last mile solution. The map must list data sources and all assumptions made (e.g., type and location of equipment installed, signal strength, terrain limitations, building interference, etc.) If completed, attach the wireless propagation study.



N/A as this is an underground fiber to the home network.

- e. **A map showing the speed availability of each location to be served. The equipment utilized to enable the locations depicted on the map shall be provided in the description of the work that will be done. The description shall include data sources, all assumptions made, including type and location of equipment installed, distance limitations, etc.**

See **Post Completion Map attached (G-c)**. Because of the XGS-PON network architecture, every address in this project will be able to receive symmetrical 100, 1Gbps, and 2 Gbps speeds.

- I. **Letters of support. If letters of support are not filed at the time of the application they should be submitted by the supporting party during the 60-day comment period.**

See attached for letters of support

- J. **Commitments from community anchor institutions or public safety networks to utilize your service if the project is funded (if applicable).**

n/a

- K. **A chart detailing anticipated penetration rates over the course of the project period (date of contract being signed to final report being approved, not to exceed two years), which includes the three years after the project period has ended.**

See attached **Attachment K, Penetration Rates**.

We make some assumptions in Attachment K:

- Years 1 and 2 no revenue will come in as the build occurs.
- Year 3, we assume 35% of the 75% take rate connected.
- Year 4, we assume 45% more of the 75% take rate connected.
- Year 5, we assume all 75% take rate connected

Applicant Certification:

By signing below, I, on behalf of the above applicant, attest and agree as follows:

- (1) I have read and understand the currently effective Board policies, the requirements contained in this application, the applicable law and requirements related to the grant, and the "Instructions" in this application;
- (2) The information submitted in this application and all attachments is true, correct and complete, the information is not designed to mislead, and that I have read and understand all grant requirements and disclosures;



- (3) In the event my application, or any parts thereof, are incomplete or otherwise do not address all requirements, it could result in the Board rejecting this application or rendering an adverse decision on this application;
- (4) I, or staff with my company/organization, have made a good faith effort to investigate and identify incumbent providers and the local jurisdiction(s) for the project area and have or will provide a copy of this application to such parties in accordance with Board policy; and,
- (5) The applicant company/organization has the resources, capacity, skills, and expertise necessary to complete the project for which grant funding is sought herein within two (2) years of the award.

BY THE ABOVE APPLICANT:

Josh Wehe
Signature

Josh Wehe
Name

Operations Director
Title

01/13/2023
Date