



## **BROADBAND ACCELERATION GRANT**

### PROJECT PROPOSAL

PROJECT NAME: BVT\_NEMAHANORTH36

# ABOUT BLUE VALLEY TECHNOLOGIES, INC.

Blue Valley Technologies, Inc. (BVT), is a wholly-owned subsidiary of Blue Valley Tele-Communications, Inc. (BVTC). BVTC is a forward-thinking independent communications cooperative with a history of over 65 years of serving rural residents with the communication services they need and deserve.

One of the first in the nation to deploy fiber to even its most rural customers, BVT is a leader in the industry, winning multiple awards for innovation, customer service, and leadership.

Governed by a Board of Directors elected by the Patrons, BVT is focused on living up to its Mission Statement:

*Blue Valley Technologies is a progressive, member-owned cooperative providing the highest quality, cost-effective services and dedicated to providing a superior customer experience using current technology for the communities we serve.*



# I. EXECUTIVE SUMMARY

Blue Valley Technologies, Inc. (BVT), a wholly owned subsidiary of Blue Valley Tele-Communications, Inc., submits a Fiber-To-The-Premise (“FTTP”) project for rural locations in Nemaha County, Kansas, north of Highway 36 between Baileyville and Bern, for consideration under the Broadband Acceleration Grant.

Based on Form 477 data and evidence provided by area residents, BVT found the area locations to be vastly underserved by reliable broadband.

BVT has existing facilities in close proximity to these locations, allowing BVT to easily leverage those assets in order to expand our services into this area.

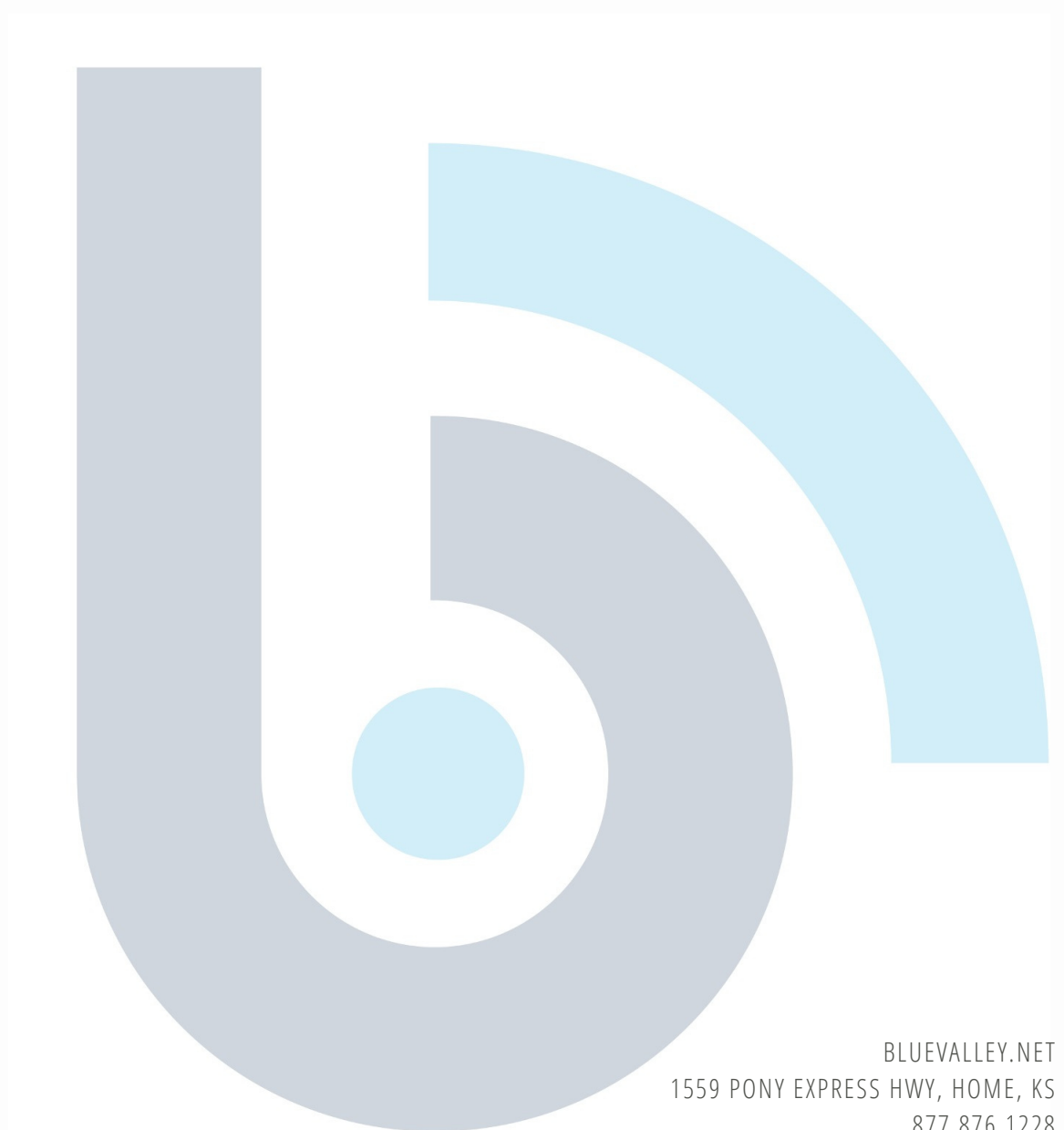
BVT will use a Metro Ethernet transport ring of up to 100G connected to our current ring topology, as well as Passive Optical Network (“PON”) distribution of up to 1G to the end user, both powered by Adtran, Inc. TA5000 platform. Services will be delivered over a point-to-point FTTP network using buried fiber and Adtran optical network terminals. Given the theoretically unlimited capacity of fiber optic cable, the system will meet all current and future needs of the residents and businesses in the area.

The preliminary network design will be able to provide direct FTTP to all locations inside the area indicated on the public fiber map, as well as scalable expansion of physical plant, as the need arises. As the Adtran TA5000 system is modular and expandable, BVT will be able to quickly upgrade network capacity and technology as needed.

Over the last 21 years, BVT has designed, implemented, maintained, and operated broadband networks in Marshall, Washington, Pottawatomie, and Nemaha counties. BVT began offering broadband services with DSL technology in 2001 and in 2007, began offering broadband via hybrid fiber/coaxial and FTTP. Blue Valley has years of experience in a variety of technologies including, but not limited to, FTTP, Metro Ethernet, Active Ethernet, GPON/BPON, hybrid fiber/coaxial networking, DOCSIS, and VoIP. We have a combined nearly 700 years of engineering and operational experience in broadband networking on staff.

# I. EXECUTIVE SUMMARY (CONTINUED)

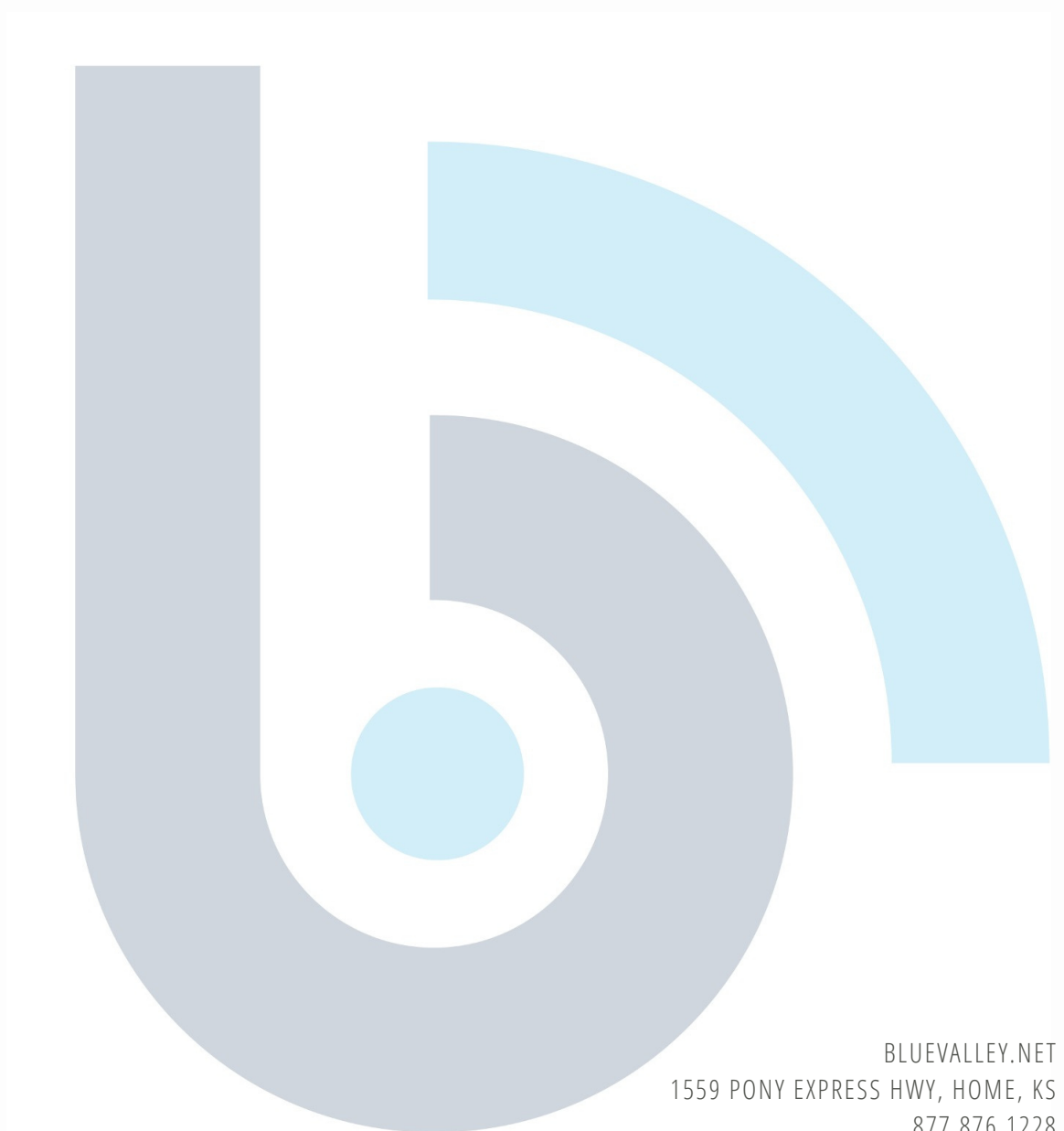
BVT has designed the project to leverage the investments made for the Bern, Kansas project (funded under the 2021 Kansas Broadband Acceleration Grant). The buried fiber drops to the locations can be spliced from the main feeder fiber currently being installed to support Bern. Furthermore, all locations can be serviced from the distribution electronics housed in existing facilities. As such, this project, if approved, would begin on or about May 2nd, 2022, and would be able to deliver broadband services of up to 1G to locations as they are spliced. We estimate that the project will be complete by August 30th, 2023.



## II. LOCATION DESCRIPTION

This project encompasses rural areas of Nemaha County, Kansas extending north from Highway 36 between the towns of Baileyville and Bern, Kansas. This area will include St. Benedict, Kansas, following KS-178 north of Highway 36, and then following KS-71 and KS-63 to Bern.

It is the goal of BVT to construct and deploy a FTTP network in the rural areas described above. This network will be capable of delivering broadband up to 1 Gbps symmetrical service, allowing customers to have a predictable experience for telework, telehealth/medicine, or distance learning.

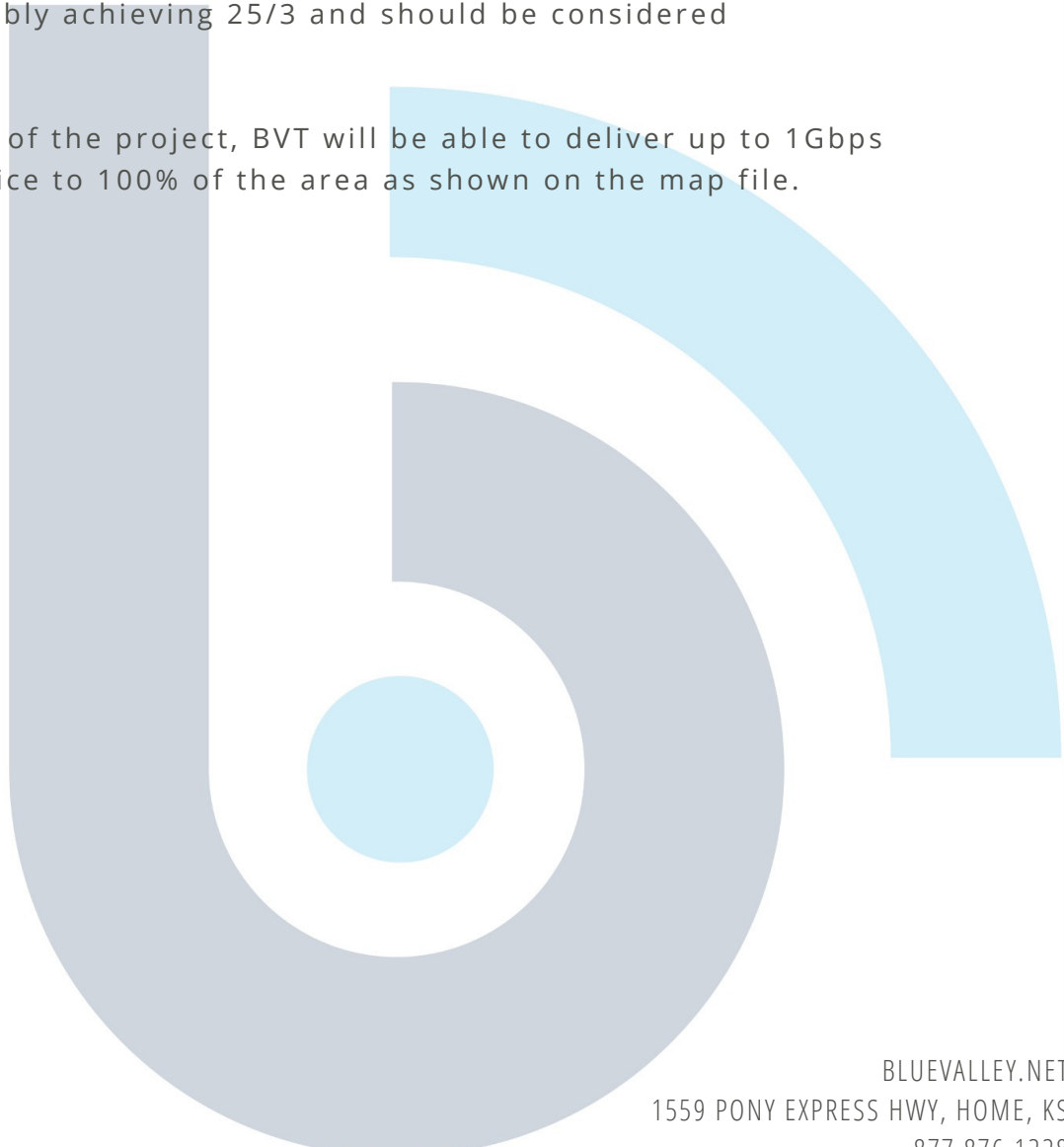


### III. PROJECT GOALS/COMMUNITY NEED

Currently, the rural locations in Nemaha County, Kansas, north of Highway 36 between Baileyville and Bern are serviced by KwiKom, formerly BBWI, Inc./Haug Communications, and, in very limited locations, by BVT via fixed wireless. This service operates on unregulated, public frequencies, which may or may not be available for use as the FCC reassigns public frequencies. Moreover, there are limitations to number of customers that can be serviced on a fixed wireless service, including geographic features limiting line-of-sight ("LOS") bandwidth, latency, and reliability, weather-related issues affecting LOS, as well as propagation distance limitations.

Based on Form 477 data and community feedback including speed test results that we have received from the residents inside the project area, they are not reliably achieving 25/3 and should be considered underserved.

Upon completion of the project, BVT will be able to deliver up to 1Gbps symmetrical service to 100% of the area as shown on the map file.



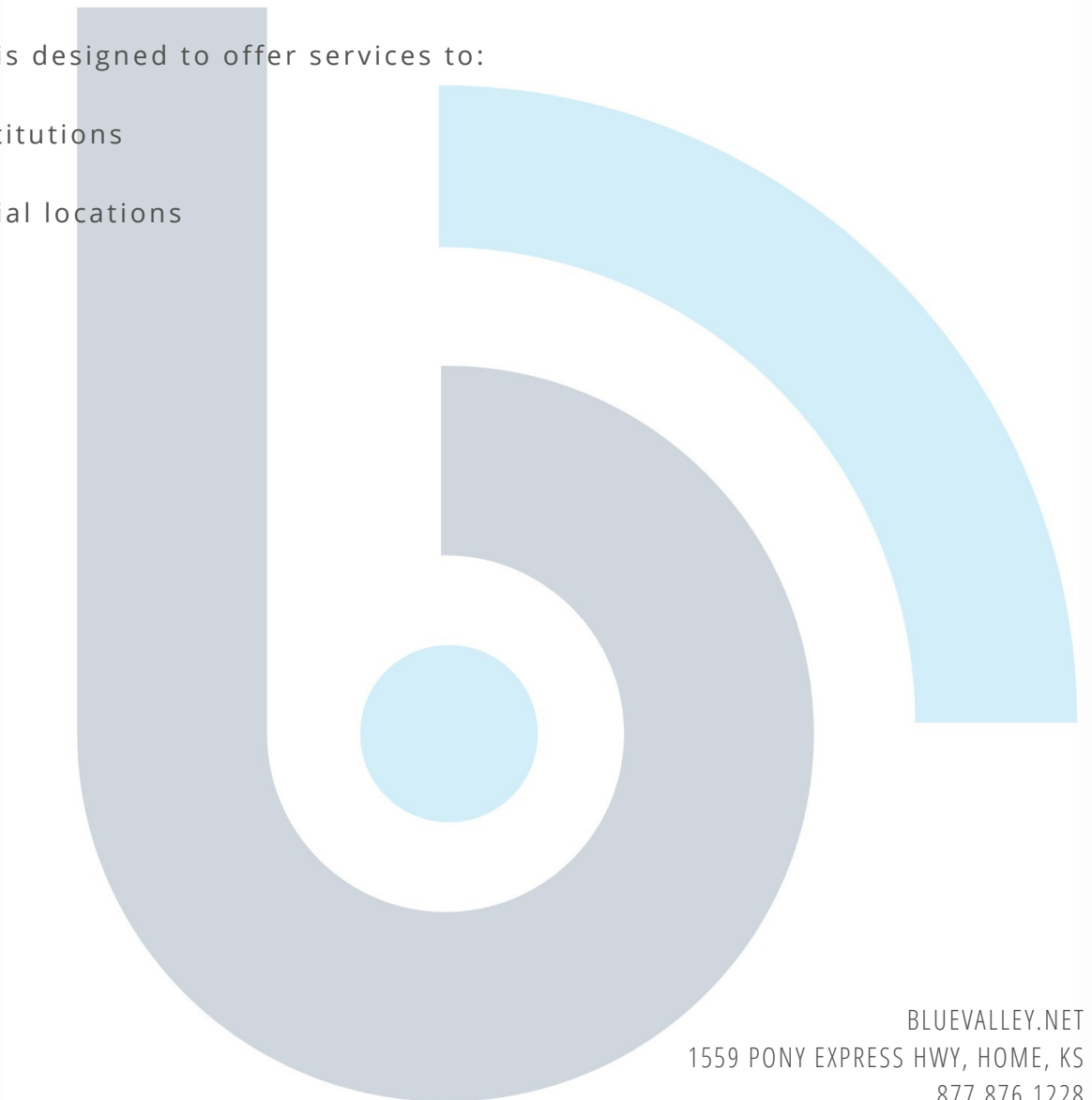
## IV. PROPOSED INFRASTRUCTURE

BVT will use a Metro Ethernet transport ring of up to 100G connected to our current ring topology, as well as Passive Optical Network (“PON”) distribution of up to 1G to the end user, both powered by Adtran, Inc. TA5000 platform. Services will be delivered over a point-to-point FTTP network using Corning fiber and Adtran optical network terminals. Given the theoretically unlimited capacity of fiber optic cable, the system will meet all current and future needs of the community.

The network design will be able to provide direct FTTP to all locations inside the area indicated on the public map, as well as scalable expansion of physical plant, as the need arises. As the Adtran TA5000 system is modular and expandable, BVT will be able to quickly upgrade network capacity and technology as needed.

This project is designed to offer services to:

- 1 anchor institutions
- 6 businesses
- 167 residential locations



## V. SHORT/LONG-TERM INVESTMENT BENEFIT

Broadband will provide job creation/retention by improving the ability for existing employers to retain employees via telework, offering training for local workers, attracting high-tech remote workers, and generating increased interest for businesses to locate personnel or facilities to the area.

Broadband can help improve healthcare by increasing access to remote emergency care, ongoing care via telemedicine devices, forging opportunities for specialized medical consultations, and creating the potential for expansion of care facilities via remote diagnostics and consultations.

Broadband with sufficient bandwidth and reliability must be present at school facilities, remote locations for staff, and in the home of students. This is critical not only to ensure live connectivity for remote classes, but also to provide access to research, prerecorded lectures, interactive lessons or lab work, supplemental coursework, tutoring, and resources for special education.

