

Broadband USA Applications Database

Applicant Name: Executive Office of the Commonwealth of Pennsylvania (Office of Administration)

Project Title: The Pennsylvania Education Network

Project Type: Middle Mile

Executive Summary

a) Opportunity the proposed system seeks to address. The Pennsylvania Department of Education (PDE) views the BTOP program as a rare opportunity to close the Digital Divide in our educational system. We respectfully apply for this funding to end the disparities in price and availability between rural and urban areas for high-speed broadband services to schools, libraries and institutes of higher education and their students and stakeholders. By aggregating the demand of 514 educational “anchor institutions” across the Commonwealth, we will provide better Last Mile connectivity to those particular locations, (which include 71 unserved and underserved sites) while growing the Middle Mile infrastructure by approximately 900% in critical areas. This approach has already been tried in Pennsylvania and it works. In 2004, PDE launched a state program known as the Act 183 E-Fund which offered \$10 million per year for broadband improvements in K-12 institutions. It provides subsidies to K-12 anchor institutions for broadband infrastructure and financed related equipment, applications, professional development and sustainability programs. The E-Fund requires competitive procurements to ensure cost-effectiveness, requires compliance with the federal E-Rate program to leverage external dollars and requires schools to cooperate on purchases and pay a significant local match. The program’s success has been remarkable. Prior to the E-Fund, few schools in Pennsylvania had adequate broadband, or they were paying far too much for too little service (see the red map below). Three years later, our schools have achieved a 470% increase in total broadband capacity (see the red map below) and they have created a new statewide K-12 network for education known as PAIUnet, (for the Pennsylvania Association of Intermediate Units). Moreover, private telecommunications companies matched our E-Fund dollars, investing \$34 million of their own capital to build new infrastructure. All of this is a direct result of the E-Fund. The problem we seek to address is straightforward. Pennsylvania’s budgetary situation is in terrible trouble. Act 183 is set to expire and will not be renewed. The BTOP program will extend our successful efforts to K-12 schools and extend the program to libraries, Pre-K institutions and institutions of higher education, which currently aren’t eligible for E-Funds according to the statute. PDE’s three-part application includes this Infrastructure application for telecom infrastructure, equipment and technical oversight, a Sustainable Broadband Adoption application, for professional development, outreach and project management and a Computer Center application, to extend these gains outside the classroom walls. In addition, our application is prepared in accordance with the Commonwealth’s other applications to expand Last Mile Access in rural areas and provide improvements for other vulnerable populations. b) A general description of the proposed funded service areas (location, number of communities, etc.) Pennsylvania has 67 counties- six of which are in densely populated urban areas in the southwest (Pittsburgh) and southeast (Philadelphia). Generally, these urban areas already have good

broadband coverage. The emphasis of this application is on the other 61 counties in the Commonwealth. Our application lists 500 schools, Pre-K institutions, libraries and colleges that are in the areas demonstrating the greatest need for improved broadband capacity. c) Number of households and businesses passed. This project aims to impact approximately 40% of Pa. K-12 school districts, 60% of its private colleges, all of its state universities and community colleges and library and pre-K sites in all 67 counties. While there are some sites in urban areas, the vast majority are in rural areas. Based on U.S. Census data, PDE estimates that the Middle Mile service deployed via this program will pass 7.3 million people (60% of Pa.'s population), 2.9 million households and 590,000 businesses/organizations.

d) Number of community anchor institutions, public safety entities, and critical community organizations passed and/or involved with project (e.g., health care, education, libraries, etc.). PDE has identified 514 primary entities to receive enhanced services. These institutions meet four criteria of policy and practical importance: 1) they are in unserved or underserved areas; 2) they will provide assistance or facilitate information exchange to institutions in unserved or underserved areas; 3) they are capable of using high-bandwidth services; 4) they are able to pay a match: • 259 K-12 institutions; 89 institutions of higher education; 100 Library sites and 66 Pre-K sites PDE also lists 819 alternate locations that also will be eligible to benefit if costs come in under budget and/or primary sites cannot act in a timely manner to meet BTOP schedules. e) Proposed services and applications for the proposed funded service areas and users. These anchor institutions will purchase Last Mile service at 10 Mbps, 100 Mbps or 1,000 Mbps speeds, depending on need and ability to pay. PDE will oversee their competitive bid processes to comply with BTOP timelines and to ensure quality vendors. BTOP monies will subsidize the Middle Mile build-out and non-recurring Last Mile costs so the buyers only need to pay the recurring costs, bringing price parity to these rural areas compared to urban areas. Where the anchor institutions are located, new high-speed services will be available to the general commercial public. f) Approach to addressing the non-discrimination and interconnection obligations. PDE and its institutional partners (the buyers listed in this application) are either conducting or will conduct competitive procurement processes to finalize the infrastructure buildout costs. Any qualified Last Mile/Middle Mile carrier service provider may provide services. Service providers will be required to acknowledge and comply with applicable non-discrimination and interconnection obligations, consistent with existing programs such as E-Rate. g) Type of broadband system that will be deployed (network type and technology standard). Our system will create multiple 10/100/1,000 Mbps Wide Area Networks (WANs) using Ethernet-based technologies. WANs will connect like-minded institutions for the rapid exchange of high-bandwidth information and will peer with other educational networks as they are built. h) Qualifications of the applicant that demonstrate the ability to implement and operate a broadband infrastructure, and/or be a sustainable broadband services provider. PDE has demonstrated success in using grant monies to achieve broadband infrastructure goals. During the first three years of the E-Fund, our \$13 million contribution leveraged \$34 million in private investments by telecom companies and deployed 2,000 new miles of fiber, 50 new PoPs and 60 new wireless towers. More details are contained elsewhere in this application. i) Overall infrastructure cost of the broadband system. \$113.12 million. \$42.22 million is for nonrecurring costs for paying telecom companies to build new Last Mile and Middle Mile infrastructure to the sites in the application for the specified levels of bandwidth. These funds would come from BTOP. \$63.33 million would be the recurring fees paid to the providers for these services. These would be paid by the buyers with federal E-Rate funds, if available. In addition, we are seeking \$2.57 million for

equipment and \$5 million for technical support services. We have a 56% match (35% without E-Rate).
j)Overall expected subscriber projections for the project. We expect to provide better Last Mile service to 514 specific sites and a 900% increase in Middle Mile capacity. If a named site cannot participate, we will replace it with an alternate. k)Number of jobs estimated to be created or saved as result of this project. We estimate that this project will create 995 new jobs.