Baltimore City, the proposed service area in this application, is an independent city and the largest city and cultural center of the U.S. state of Maryland. The city is located in central Maryland along the tidal portion of the Patapscoc River, an arm of the Chesapeake Bay. Founded in 1729, Baltimore is a major U.S. seaport and is situated closer to major Midwestern markets than any other major seaport on the East Coast. Baltimore City Public schools has great students with great potential, and they all deserve great schools. The school system is working to transform Baltimore City Public Schools ('City Schools') into an entire system of great schools. School communities must be responsible to its students, and great schools happen when everyone in the school, the system and beyond takes that responsibility to heart. To be great, schools must have: great principals; great teachers in every classroom; instruction that reaches all kids, with their many different needs; involved parents and communities; the freedom to create a unique learning community; and great infrastructure and resources to facilitate instruction. The Broadband Technology Opportunities Program offers City Schools a unique chance to improve its data infrastructure and deliver high-speed broadband to the entire school community. This proposed project is a powerful solution to what is now a critical problem: the need for fast, reliable, affordable access to network resources and Internet services is now a necessity in all areas of daily life, particularly when it comes to education. The Baltimore City public school system has seen its reliance on network infrastructure increase from the basic use of e-mail as a communication tool to demand for video streaming, virtual classrooms and live conferencing. The increasing demand on the network from the City Schools community has turned a spotlight on a critical need for upgraded and enhanced infrastructure. This project must be done. It must be done to allow for the continued smooth operation of our business processes. But most importantly, it must be done to empower city school children with the necessary academic and computer literacy skills needed for them to compete in the 21st century. City Schools' middle mile fiber optic network initiative will interconnect 204 public school community anchor institutions and one public safety entity located throughout Baltimore City. This project will provide a sustainable and scaleable self-managed network for the school system, delivering necessary bandwidth for informational and instructional technologies in the classroom, and increased information sharing with local public safety entities to keep our schools safe and secure. In addition, this project will increase available fiber infrastructure within the City of Baltimore and offer local agencies a more cost-effective option to upgrade to their own self-managed networks. This proposal will pass approximately 260,000 households, 13,800 businesses, and 350 community anchor institutions and offers far-reaching benefits including increased information sharing between agencies and significant cost savings on monthly service charges. Better connectivity means a more efficient means for exchanging critical
information about students to ensure they are healthy, safe and receiving appropriate government services. Baltimore City is serviced by over 35 primary and secondary hospital facilities, 21 public libraries, 10 police patrol districts, over 40 fire stations, and approximately 50 recreation centers. All of these community anchor institutions are potential beneficiaries of the proposed project, in addition to the 204 community anchor institutions that will receive direct connectivity within the scope of this project. City Schools is required to share information with many local agencies in Baltimore City to serve students, including the Health Department for child immunizations, Department of Social Services for direct certification of free and reduced meals status, and the Department of Transportation to make sure students travel safely to and from school. City Schools has received letters of support for this project from several public agencies: Baltimore City Housing; Baltimore City Department of Planning; Baltimore City Department of General Services; Baltimore City Department of Recreation and Parks; and, as previously noted, the Baltimore Police Department. All of Baltimore City is behind the project, and local agencies can clearly see the benefits the project will bring to school children and the greater community. City Schools delivers instruction to over 82,000 students and performs community outreach to over 100,000 parents and guardians. City Schools employs approximately 12,000 school-based and administrative professionals, and provides an extensive portfolio of in-person and online professional development opportunities to empower staff to facilitate and deliver a rich and varied curriculum to students. Of the 179 instructional and administrative buildings utilized by City Schools across 204 community anchor institutions, only 64 currently have fiber optic connectivity. More than 60% of community anchor institutions have to connect via 1.5Mbps copper connections which are no longer adequate to support the needs of the City Schools community. The proposed project is a high speed, completely scalable fiber backbone network consisting of a core ring and eight subtending rings. It will be able to adapt to the changing technology needs of the school system for the purpose of increasing the speed of delivery of services related to education, business operations, parent involvement and the public safety of our students, staff, parents and community. The network design is based on a Resilient Packet Ring (RPR), also known as IEEE 802.17. The IEEE Standard 802.17-2004 standard was approved in 2004 to provide packet-based transmission in order to increase the efficiency of Ethernet and IP services. A ring design adds resiliency and redundancy, allowing for two pathways for data to travel in order to reach its destination. The proposed network infrastructure is a standard design for the optimized transport of data traffic over optical fiber ring networks and provides the technology for self-healing networks. City Schools will adhere to the nondiscrimination and interconnection obligations as noted in the Notice of Funds Availability by employing generally accepted technical measures to provide acceptable service levels to our subscribers, and will follow all applicable requirements and laws associated with management of the proposed network. City Schools intends to release a Request For Proposal for all products and services required for the installation, implementation and maintenance of the proposed project as is required by state and local procurement laws. City Schools intends to engage one or more outside vendors to perform all construction, fiber placement, hardware configuration, installation, and maintenance in order to complete the proposed project. Additionally, internal City Schools staff will work alongside the awarded vendor(s) to provide oversight to the installation and implementation of this project. City Schools employs a team of highly-skilled staff members with extensive experience in data communications, network management, and project management of large-scale network infrastructure projects. It is estimated that this project will create and / or save
approximately 147 direct job-years, and therefore supports the goals of the American Reinvestment and Recovery Act relating to saving and creating jobs, as well as making crucial public investments.