Executive Summary

The District of Columbia's Community Access Network ('DC-CAN') infrastructure proposal aims to deliver affordable, value-added middle mile services to community anchor institutions in the city's economically distressed areas, and create points of interconnection for last mile service providers to deliver affordable broadband access to residents and businesses in these areas. The District's first goal is to provide community anchor institutions with access to up to 10 Gbps broadband services and applications targeted to their needs. Such services are not affordable through commercial service providers. Through DC-CAN, community anchors will be able to tap into a pre-existing government network that serves a wide array of health providers, educational institutions, and public safety entities in the District. The District's second goal is to establish a robust, high capacity network core with points of interconnection providing access to middle mile services in the city's economically distressed areas, where services are not currently available at affordable rates. This network will enable last mile partners to peer at a reasonable cost, providing end user access via any type of technology at speeds up to 40 Gbps. Through competitive pricing for all partners, the District aims to spur the delivery of affordable Internet services to homes, businesses, and community-based organizations in the city's economically distressed areas and to foster economic development in the regions of the city where it is most needed.

Service Area Profile

Of the District's eight wards, Wards 5, 7 and 8 can be classified as 'economically distressed' according to criteria defined in the BTOP NOFA (Round 2). Unemployment in wards 5, 7 and 8 is well above the national rate for the past 24 months and the area's per capita income is less than 80% of the national per capita income. These wards, with Wards 6, 4 and 1, form the contiguous underserved service area for this proposal. In December, 2009, compared to a national unemployment rate of 10.0%, unemployment in Ward 5 was 15.8%, in Ward 7 it was 19.9%, and in Ward 8 it was 28.7%. Most recent per capita income data (2003) paints a similarly grim picture: $21,551 or 68.1% of the national average of $31,632 in Ward 5; $19,035 or 60.2% of the national average in Ward 7; and $14,137 or 44.72% of the national average in Ward 8. Given these income levels, last mile broadband service is simply not affordable. Based on analysis of wired broadband adoption rate, the District has an overall broadband adoption rate of 57.87%; however, broadband adoption rate in these wards is under 40%.

Community Impact

DC-CAN will provide fiber broadband infrastructure and affordable middle mile services to 85 schools, 64 health clinics, 23 libraries, 15 senior wellness and nutrition centers, 35 public housing buildings, 4 community college and university locations, and 7 halfway houses. Anchors serve a
wide range of vulnerable populations as defined in the NOFA. In addition, DC-CAN will extend service to 35 fire and rescue and 23 police sites. Of the 291 anchor sites, 182 are in the underserved area. This proposal impacts an estimated 415,000 people and creates 270 jobs. Proposed services to community anchors—many of which have little or no current broadband service—include full voice, video, data, and wireless services up to 10 Gbps at affordable rates. In addition to providing much-needed service to community anchors in underserved areas, the District's proposal leverages critical citywide service networks in the areas of health, education, and public safety. These networks will provide value-added services and applications that specifically align with the mission of community anchors and critical community facilities, enabling: - Community health centers and their patients to share confidential health-related information over a HIPAA-compliant, dedicated service network, improving access to telemedicine, health education, in-home self-monitoring, and other applications. - Public schools to have access to the Internet and shared educational applications (such as Internet2, National LambdaRail, MAX) with other DC public schools, the University of the District of Columbia (UDC), and the Community College of the District of Columbia (CCDC). - Public schools and public libraries to serve as centers for the delivery of content-rich applications such as video teleconferencing and smart boards, fostering interactive learning with students around the country and world. In addition, all libraries will be upgraded to 1 Gbps capacity in support of the District's Public Computing Center and Sustainable Broadband Adoption initiatives to deliver computer-based skills learning and job training. - CCDC to offer job training programs and educational services to low-income student populations using 1 Gbps links with UDC. - Public safety entities, including all Fire and Emergency Management Services (FEMS) and Metropolitan Police Department (MPD) sites to respond more efficiently and in better coordination to emergencies both within the District and across the National Capital Region. Public safety users will gain improved access to secure federal databases and regional public safety networks. Last Mile Partnership Numerous potential economic benefits arise from this project. By building points of interconnection at significant carrier sites and establishing partnerships with carriers and other last mile service providers, the District seeks to spur the delivery of affordable Internet services to homes, businesses, and community-based organizations in the city’s economically distressed areas and to foster economic development in these regions. The District will provide incentives to any qualified partner delivering affordable last mile services in the underserved area. It will offer low-cost middle mile layer 1 and layer 2 backhaul services (currently not available from commercial providers) in the underserved area. Project Technology To support its mission, the District will construct a robust, carrier-grade core ring that will provide service to 291 community anchor institutions and provide low-cost, high-bandwidth backhaul services with points of interconnection throughout the city for last mile service providers. Key features of this infrastructure include: - 50-mile underground core fiber loop throughout the city with extensive coverage in underserved Wards 5, 7, and 8 enables interconnection between underserved and well-served areas. - Core DWDM technology, 40 to 80 channels, with each channel capable of supporting 10 Gbps to 40 Gbps and scalable to 100 Gbps. - 10 Community Anchor Points strategically located across all wards, ensuring equal access and bandwidth capabilities to underserved areas. - High bandwidth interconnects at lower cost while maintaining clear segregation of commercial and government traffic at physical and logical levels. - Layer 1 dark fiber and wavelength, layer 2 Ethernet, and layer 3 IP-VPN Multi-Protocol Label Switching (MPLS) services. Interested partners can peer using any type of technology. - Wi-Fi access points (WAPs) installed at each community anchor institution, providing free
local access to the Internet and establishing an infrastructure for broader public wireless access. Capability Through the DC-Net program in the Office of the Chief Technology Officer (OCTO), the District has the network infrastructure, staff experience/expertise, and operational systems in place to successfully implement, manage, and operate the proposed overlay to its citywide fiber optic network. DC-Net is a public-safety-grade network that provides site redundancy, security, and high availability for government traffic. DC-Net owns and operates outdoor fiber optic cable plant, network electronics and management systems, wireless access points, voice switches and management systems, and telephones. It provides telecom services to over 330 public safety locations, public schools, employment centers, and other government sites in the District. DC-Net supports itself from monthly revenues from customer agencies and institutions and follows zero-based budgeting; as a result, it is sustainable. Project Budget, Match and Grant Request DC-CAN project is budgeted at $25,033,000, and is scheduled for 30 months. The District will contribute $7,575,058 (30.2%) in non-federal match, of which $7,513,090 (30.0%) is cash; the remainder is in-kind services. DC-CAN is requesting $17,457,942 (69.74%) in federal grant funds.