

Broadband USA Applications Database

Applicant Name: Case Western Reserve University

Project Title: University Circle Innovation Zone: An Integrated Ultra Broadband Public Services Platform - Build

Project Type: Last Mile

Executive Summary

Introduction: Case Western Reserve University (CWRU), allied with over 40 public anchor institutions and additional private partners, propose an ambitious goal of connecting ultra-broadband technology to at least 5000 households in some of the poorest and most technologically underserved neighborhoods in the country. The poverty rate in the designated neighborhoods exceeds 30%, the unemployment is 14.8%, and in some neighborhoods upwards of 72% are not connected to the Internet by any means. Connectivity plans for the University Circle Innovation Zone (UCIZ) arose through community discussions and listening posts over the past five years and are based on residents' highest priorities: safety, education and skills development, health and wellness, and energy and household costs management. UCIZ constituents will deliver programs to meet these residential priorities through a combination of home-based services, neighborhood computer centers, and public housing facilities, senior citizens facilities, churches, libraries, and other locations.

a. Opportunity the proposed system seeks to address: The poor neighborhoods of the UCIZ are socially and economically isolated from many opportunities, isolation accentuated by the near absence of broadband and internet connections, and thus access to the skills, information, services, and opportunities springing from the use of those technologies. Through the UCIZ Project, BTOP represents an unusual opportunity to connect every household in multiple underserved and underprivileged neighborhoods and their residents to a unique public sector platform for attending to health and wellness, education and skills development, public and neighborhood safety, and energy and household energy management and thus to opportunities for betterment, and thus to enhanced opportunities for social and economic engagement and to improved links to services.

b. A general description of the proposed funded service areas (location, number of communities, etc.): Parts of four contiguous eastside Cleveland neighborhoods (Hough, Buckeye-Shaker, Fairfax, and University Circle) and the small municipality of East Cleveland (a total of 18 census tracts) are neighborhoods targeted by UCIZ. University Circle at the center or hub is home to a cluster of nationally prominent medical facilities and cultural institutions and to residents, many economically deprived. Hough, Fairfax, Buckeye-Shaker, and East Cleveland radiate to the west, southeast and northeast from University Circle, and together constitute the University Circle Innovation Zone. Additional neighborhoods and tracts in need of broadband service lay further outward, but Phase 1 is the first ripple of a larger project to connect a superior broadband network to badly underserved residents and neighborhoods. Cleveland's poverty rate is annually listed among the top three in the nation, as are other indicators of distress, but the picture is more variegated – and more severe for the neighborhoods to which broadband service will be extended. In the UCIZ sectors 1 in 3 people receive food stamps; up to 100% of babies – born at an

exceptionally high rate to teenage mothers, are enrolled in Medicaid; and foreclosure rates average 18%, with several tracts exceeding 25%. Conditions such as asthma, diabetes, high blood pressure, and obesity are rampant, all exacerbated by inadequate health information and fragmented and sporadic medical care. Graduation rates are among the lowest in the nation and STEM enrollments are even lower.

c. Number of households and businesses passed: The population numbers in the targeted areas declined at least 15% or more between 2000 and 2008, losses accelerated by lost jobs and high foreclosure rates; we estimate the current number of households to be fewer than 10,000. They include eight public housing projects with 1552 households which includes 385 senior citizen facilities. The project will pass approximately 465 establishments and 16 safety facilities.

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.): CWRU is joined by a coalition of over 40 public sector anchor institutions and a wide range of private service providers, as attested by letters of support. They include nationally leading medical centers, two school systems, a public university and a community college, three library systems, three public safety forces, three Public Computer Centers (community learning studios), a public power company, social service agencies for children and adults, an array of cultural institutions, public housing authorities, churches, economic development agencies, private and community philanthropies, and public radio and television among them, as well as prospective vendors.

e. Proposed services and applications for the proposed funded service areas and users: The potential service enhancements and applications are legion. They include but are not limited to: 1) a commitment to enhance and augment neighborhood and public safety through remote and visual monitoring by three collaborating public safety groups; 2) pilot health and medical programs to address chronic health issues, and patient care, including home communications systems; 3) develop unique programs with two newly formed STEM schools, tie students and parents into the educational resources of the internet, and engage students at all levels in community service and learning; 4) enhance job training, business development, and social services; and 5) use the technology to create smart grids (and relevant sensor systems) with applications in residents' uses and management of energy, in-patient health care, and environmental monitoring of homes.

f. Approach to addressing the non-discrimination and interconnection obligations: The UCIZ broadband connections will be open to all providers on an open and non-discriminatory basis.

g. Type of broadband system that will be deployed (network type and technology standard): The ultra-broadband system will connect more than 5000 households to the institutional anchor institutions and the Internet through the unprecedented technical architecture of OneCommunity based on fiber optics using the standard of switched gigabit to each and every household. The open platform gigabit data network will support the integrated public sector platform and enable competition among telephony, video, and other value-added service providers to subscribers using standard network segmentation technologies.

h. Qualifications of the applicant that demonstrate the ability to implement and operate a broadband infrastructure, and/or be a sustainable broadband service provider: CWRU was the first university in the nation to deploy fiber to every data outlet (nearly 20,000) in 1989, and founded OneCommunity in 2003, the largest non-profit, community-based, multi-sector network operator in Ohio, and possibly the nation. OneCommunity is a robust, state-of-the-art fiber optic network connecting more than 1500 public sector anchor institutional facilities and more than 1 million end users in 22 counties in NE Ohio. These community partners are working with OneCommunity to extend the superlative architecture to create what we believe will be

the nation's first integrated public services network platform capable of delivering an array of programs and services.

i. Overall infrastructure cost of the broadband system: The UCIZ is an integrated strategy for connected communities. CWRU has completed a referenced submission to NTIA on all three tracks which include infrastructure \$26.6M, Public Computer Centers \$1.2M, and sustainability \$1.3M; each track stands on its own but builds on the infrastructure layer. The total cost for this first phase of UCIZ is \$29.1M. While apparently high, the costs are more than competitive and returning a high ROI when considering the quality of the network, its 30-year life, and its amortized value are considered, along with its exceptional return on community value.

j. Overall expected subscriber projections for the project: Over the first 18 months no fewer than 5000 households with 22,000 users (partly through arrangements with the local housing authority and HUD facilities) will be using the platform for safety, health, education, and energy management. An additional 4000 households will be connected subsequently in coordination with public works, land bank, and urban core restoration activities.

k. Number of jobs estimated to be created or saved as a result of this project: Using the econometric modeling developed by MIT's Lehr, Litan, and Crandall (2007) and deployment models developed by Corning fiber engineers, we estimate that the build out of Phase 1 of UCIZ will create approximately 540 FTE jobs over a 18 month deployment schedule. Included in this figure are identified minority-owned cabling and fiber-optic businesses. In the post-deployment period, CWRU anticipates nearly 200 permanent positions that include cabling, service repair, technicians, back office operations and call center support activity. Additional models of underserved regions suggest that in a community such as ours (in which 72% have no Internet connectivity) various forms of new business activity will arise. We estimate a job growth rate of 30% (approximately 800 new jobs in secondary and tertiary employment markets), and additional jobs not only in the health, education and public service sectors, but in home-based and neighborhood businesses.