

Broadband USA Applications Database

Applicant Name: SmartChicago Broadband Infrastructure

Project Title: SmartChicago Broadband Infrastructure

Project Type: Middle Mile

Executive Summary

SmartChicago begins with a simple idea: broadband access has become a necessity. Broadband access is required for individuals to find a job, to communicate with each other, to educate themselves, to access information about healthcare options, and to participate in society. Broadband access is necessary for businesses to innovate, to recruit and retain talent, to grow and prosper, and to compete in a global environment. Throughout America's history, other forms of infrastructure have made a transition from being a luxury to a necessity. Electricity created unimaginable benefits for quality of life, business productivity, and industrial automation, but areas were left behind due to high costs of service and low return on investment. Now, America faces a similar challenge with broadband access. The City of Chicago (City) applauds the Administration and Congress for their acknowledgement of this challenge, and for their inclusion of broadband in the American Recovery and Reinvestment Act (ARRA). Just as the Highways Act of 1956 enabled breakthroughs in the transportation of people and goods, ARRA will enable a new era in the transportation of information and ideas. SmartChicago is the result of a decade-long effort by the City, under the leadership of Mayor Richard M. Daley, to improve the accessibility, affordability and speed of broadband access. In 2007 the Mayor's Advisory Council on Closing the Digital Divide outlined a vision of "digital transformation" through five drivers: broadband access, affordable hardware, suitable software, digital education and evolving mindsets. By focusing on these five drivers in concert, Chicago has begun to move beyond basic broadband access and towards "universal, meaningful participation with technology." Since 2007, the City has taken a number of steps towards achieving this vision. The City created four Digital Excellence Demonstration Communities to serve as incubators for innovative programs aimed at engaging vulnerable residents with technology. The 2008 Digital Excellence In Chicago study provides the most precise information on broadband adoption patterns available in any major city. In August 2008, the City began a Broadband Master Planning project that serves as the foundation for the SmartChicago proposal. The City's digital excellence work has revealed that existing broadband models are unable to reach those most in need. Accordingly, the City believes that the ARRA presents a unique opportunity to create SmartChicago, a new, scalable model for bringing broadband to underserved Americans. SmartChicago is a unique, three-tiered approach to broadband infrastructure, access, adoption and sustainability. Three integrated proposals are designed to work with and support each other: SmartChicago Broadband Infrastructure provides a fiber backbone, service to public facilities and open interconnection points; SmartChicago Sustainable Broadband Adoption leverages this infrastructure to drive demand for broadband; and SmartChicago Public Computer Centers provides underserved and vulnerable populations with critical public access to broadband, equipment, education, training and support. OPPORTUNITY BEING ADDRESSED Chicago – despite being

the hub of the Midwest region – is underserved by broadband infrastructure required of a globally competitive city. 39% of all residents lack broadband at home. Low-income, minority areas have very low subscribership rates: in 22 of the city’s 77 neighborhoods, Internet penetration is lower than in rural America. While fiber-to-the-premises (FTTP) services are ubiquitous in Toyko, Seoul and Copenhagen, even Chicago’s commercial zones are unserved by anything beyond basic cable, DSL or T-1 offerings. These basic services, when available, are priced at levels that are simply out of reach for many Chicago businesses and residents. For Chicago to compete in the 21st Century, broadband must be abundant.

PROPOSED SERVICE AREAS SmartChicago focuses on reaching underserved communities. SmartChicago will impact a high percentage of Chicago’s population (2,896,016 in 2000 census), with an initial focus on the underserved populations within the city. SmartChicago will directly connect 497 community anchor institutions, 10,000 homes in two underserved communities and 10,748 Chicago Housing Authority (CHA) units. The proposed middle-mile network has the potential to impact an additional 213,184 households, with a population of 700,503. SmartChicago also stimulates the local economy by traversing numerous federal, state and municipal economic development zones, impacting 7,183 businesses.

HOUSEHOLDS AND BUSINESSES PASSED SmartChicago will directly pass 10,000 homes, 10,748 CHA units and 4,408 businesses in underserved communities.

ANCHOR INSTITUTIONS, PUBLIC SAFETY ENTITIES AND CRITICAL COMMUNITY ORGANIZATIONS PASSED The following 497 community anchor institutions will be directly connected to the middle-mile fiber: 21 library branches, 232 schools, 8 City College of Chicago facilities, 2 museums, 28 community health centers, 3 hospitals, 26 Chicago Housing Authority developments, 110 parks, 13 public works facilities, 28 fire houses, 5 court houses and 2 detention centers. Additionally, 11 police stations are immediately adjacent to fiber network nodes.

PROPOSED SERVICES AND APPLICATIONS SmartChicago aims to provide speeds that will help America regain its leadership position in broadband. Household subscribers in the last mile pilot areas will be offered symmetrical services (same speed upstream and down) of 3Mbps, 10 Mbps, 30Mbps, and 100Mbps. Business and strategic institutions will be offered 10Mbps, 30Mbps, 50Mbps, and 100Mbps, and higher speed services as needed, up to Gigabit speed. Service offerings in the extensive middle-mile area will include 10 Mbps, 50 Mbps, 100 Mbps, and 1 Gbps, and will be available to businesses, anchor institutions, and service providers. SmartChicago’s partners will provide life-changing applications. With the access to broadband, approximately 100 applications across six focus areas – health care, education, job training, energy, safety, and transportation – will become available for use by area residents, businesses, community anchor institutions and job-creating strategic facilities. In collaboration with over 40 partners, these applications create Smart Communities where residents have access to: medical services via home or school that reduce expensive and often unnecessary visits to the emergency room; workforce training and digital learning programs that can be accessed at any time, from any place; homes that use energy more efficiently; and real-time transit information ubiquitously. Further examples of educational, job training and public safety applications are provided in questions 10 and 11 and Appendix A.

NON-DISCRIMINATION AND INTERCONNECTION OBLIGATIONS SmartChicago will be an open network. The middle-mile infrastructure includes 597,509 lineal feet of fiber, and specific and separate access for interconnection will be provided every 500 to 1,000 feet of that infrastructure, at an estimated 1,200 locations. These interconnect points provide access to all qualified service providers. SmartChicago fully supports the Notice of Funding Availability’s non-discrimination and network interconnection obligations, will adhere to the principles contained in the Federal Communications

Commission's Internet Policy Statement of 2005, and will not show favoritism to any Internet applications and content over others. The relevant network management policies will be displayed in a prominent location on the project service provider's Web page.

TYPE OF BROADBAND SYSTEM The proposed network is an innovative infrastructure consisting of 597,509 lineal feet of middle-mile fiber, 19 point of presence locations, a Dense Wave Division Multiplexing-enabled core and an active-Ethernet last mile.

QUALIFICATIONS OF APPLICANT SmartChicago represents an unprecedented collaboration between the City and entities from across all sectors and industries. The six-month planning process included working groups composed of City departments, sister agencies, and non-profit institutions. The City will contract with the Public Building Commission (PBC) to manage the network's deployment. PBC has expertise in the operation of large infrastructures, including fiber optic networks.

INFRASTRUCTURE COST The total infrastructure cost for SmartChicago is estimated at \$120 million. This includes \$67.5 million for fiber optic construction, \$26 million for network facilities and access equipment, \$2 million for last mile installation, \$10 million for in-building wiring for public housing, \$13 million for contracting services, and \$1.5 million for operating infrastructure. Of this total capital budget, the City and its partners are prepared to commit more than \$27 million in cash and in-kind contribution. In addition, the City and its partners are committing \$10 million in working capital. The \$120 million infrastructure costs, combined with the \$10 million working capital costs, results in a total project budget of \$130 million.

SUBSCRIBER PROJECTIONS The SmartChicago network will have a total addressable market of 213,184 households, 7,183 businesses, and 497 strategic anchor institutions. The network will make interconnect points available on a wholesale basis for qualified service providers, allowing service providers to interconnect and expand the middle-mile to reach additional markets and communities.

JOBS CREATED OR SAVED Based on the federal government's quarterly count, the City estimates the project will produce 15,616 direct jobs over a three-year period, primarily in the construction, information technology, networking, and customer service sectors.