Applicant Name: JACKSON, CITY OF

Project Title: City of Jackson Community Broadband Initiative (JCBI)

Project Type: Comprehensive Community Infrastructure

Executive Summary

a. Opportunity the proposed systems seeks to address:

City of Jackson Community Broadband Initiative (JCBI) is collaboratively-rooted project that will exploit the City’s fiber optic backbone and build out a new hybrid wireless Metro-scale broadband network called the Mississippi Online Neighborhood Electronic Network (MS ONE-Net) This broadband network includes deploying segments of Middle Mile and a Last Mile infrastructure components and that supports a dense fiber optic backbone in the City of Jackson and is powered by next-generation Wireless Network to provide broadband service to underserved and unserved and economically distressed areas of surrounding rural areas resulting in economic growth and job creation. The Network will provide immediate relief and added opportunities for all Last Mile providers in the region and also will provide a highly durable long-term data super-highway system to support future innovations and growth. (72) Number of Community Anchor Institutions (CAI), public safety agencies, and other government units will benefit directly. b. Proposed funded service area (location, number of communities, etc.): MS ONE-Net will provide service in the City of Jackson to the following underserved and unserved and economically distressed community areas have been identified as incorporated (4) areas of Hinds County, Mississippi: Bolton, Edwards, Terry, and Raymond. The build out of the new MS ONE-Net network will occur within the City of Jackson and incorporated (4) areas of Hinds County, Mississippi: Bolton, Edwards, Terry, and Raymond. c. Number of households and businesses: The underserved and unserved and economically distressed areas have been identified as incorporated (4) areas of Hinds County: Bolton, Edwards, Terry, and Raymond. Hinds County has a total of 106,559 Household based in 2008 US Census Bureau report.

- Terry has a total of 263 households as of the US Census [1] of 2000.
- Raymond has a total of 469 households as of the US Census [1] of 2000.

d. Number of Community Anchor Institutions (CAI) (e.g., health care, education, libraries, etc.); The network will have (72) of Community Anchor Institutions (CAI) which includes (21) Schools- K12, (10) Library system, (3) major health care providers, (3) Public Safety Entities, (5) Community Colleges, (10)

e. Proposed Service and applications and the end users: The service areas and the end users on the Last Mile will be provided with basic high speed Internet service as well as e-learning, telehealth services, telework services and training and e-commerce. This Middle Mile project will provide a diverse set of broadband transport services including: (a) fiber optic cable leases, (b) point-to-point optical wave services, (c) DS3, OC3, OC12 and OC48 SONET transport services, (d) Gigabit and Fast Ethernet Services, and (e) DS1, DS3, OC3, OC12 and Ethernet based Internet Services. Applications for the Network include: (a) broadband transport, (b) Internet access services, (c) video services, (d) voice services, (e) wireless voice and data applications, (f) private Intranet business networks, (g) security services, (h) data recovery and backup services, and (i) route protection and diversity services.

f. Approach to Non discrimination and interconnection obligations:

This fiber and wireless system will be open to all businesses, governments, schools, public safety and healthcare that desire to purchase an Indefeasible Right to Use (IRU) for two fibers or wireless at specified pricing. These entities may develop a network using fiber (Existing/New, or the wireless system in any manner that meets the needs of their use in the communities. MS ONE-Net will actively promote this network system to all businesses, government agencies and individuals that have a need for lit fiber, dark fiber, or the wireless system over a long period of time. The MS ONE-Net will operate and maintain the network, and offer the following services: (1) dark fiber connectivity, offered on non-discriminatory terms to any customer; (2) non-discriminatory wholesale access to last-mile ISPs at interconnection points in the un- and underserved communities; (3) wholesale to ISPs serving, at minimum, the (72) regional Community Anchor Institutions (CAI) directly connected to the middle-mile network; and (4) retail data and voice services to state agencies as well as local CAIs (such as police stations) funded and configured as needed by the state in the communities. The MS ONE-Net’s publicly owned network will offer open access wholesale services on a nondiscriminatory basis to any last-mile ISP or other carrier. All non-discrimination and interconnection obligations agreed to by the MS ONE-Net will flow through to all operators contracting with the MS ONE-Net and will meet or exceed the non-discrimination and network interconnection requirements outlined in the NOFA. g. Type of Broadband system deployed (Network Type & technology standard): Two broadband systems will be deployed wireline and wireless:
For the Middle Mile network MS ONE-Net plans to provide unlimited bandwidth over existing fiber, unlimited bandwidth over proposed new fiber, bandwidth over wireless system will operate at several bands: 2.4 GHz, 4.9 GHz, and 5.8 GHz unlicensed bands. The wireless technology implemented will be SDMA technology standard. Also, the Middle Mile network will consist of City owned route miles utilizing non-dispersion shifted fiber cables. The transport layer will include an expandable core Dense Wave Division Multiplexing ("DWDM") system, initially capable of carrying gigabits of capacity and multiple SONET ring systems. The Internet layer will include core Internet gigabit routers that will expand core MS ONE-Net Internet backbone facilities throughout the City’s network. Combined these systems provide a powerful bandwidth transport engine that extend these capabilities to over 5 communities including the City of Jackson with the wireless system overlay.

h. Qualification of City of Jackson

City of Jackson’s MS ONE-Net is partnering with Telepak Networks and Johnson Controls Inc. to build, deploy integrate the system and the networks. City of Jackson Telecommunications, Telepak Networks, and City of Jackson’s telecom equipment provider will provide the technical depth needed to implement and operate this system.

City of Jackson Telecommunications Division is a division of the Department of Administration. This division’s operations and functions are intricately meshed with those of several other divisions within the department, which include the Information Systems Division and the Records Management Division. These divisions both comprise and deliver the information technology and telecom (ITT) group of services for the City. Additionally, there are other units within our city government that are closely intertwined and dependent upon the ITT group, such as its Geographical Information Systems (GIS) unit. The Telecommunications Division’s mission, by working collectively with its ITT group counterparts, is to lead the City in the utilization of existing and emerging voice, video, and data technologies to increase productivity, achieve cost savings, and stimulate or create new sources of revenue for the City. This division is responsible for the development and deployment of technology and telecommunications in the City’s delivery of its services to the public as well. The ITT group collaboratively develops the city-wide information technology (IT) architecture that promotes the strategic deployment of systems and information services. The division also solicits, evaluates, negotiates, and administers the City's telecommunications and cable franchise agreements, towers/wireless providers, and high-capacity telecommunications networks and network services.

The City presently owns and operates 28 Towers with 116 attachments. We also have one attachment on the Jackson State University Water Tank. The City presently owns and manages approximately 113 miles of fiber optic cable. This fiber is used for operation of the city’s wide area high speed network in 12 locations throughout the city. This fiber is also used by the Traffic Divisions’ Intelligent Transportation System for signaling and cameras. This unit analyzes telecommunications needs and plans for voice and data telecommunications systems and use. Additional duties include city-wide long distance, paging and cellular telecommunications services, and competitive local telephone service. Services and platforms sustained through this unit include strategic design, planning, installation, and maintenance of the City's 800 MHz trunked radio system and 450 MHz data radio network. It provides the core technical
proficiencies that support the Radio infrastructure backbone of voice, and data applications throughout the City. i. Overall Infrastructure cost of the broadband system

The projected cost of the JCBI program is approximately $46 million to provide fiber and wireless infrastructure and connectivity for middle mile and last mile application to provide service from the City of Jackson to the following underserved and unserved and economically distressed community areas of Hinds County, Mississippi: Bolton, Edwards, Terry, and Raymond, the CAIs, and other entities. The total capital investment required to implement this Middle Mile Network is approximately $37M and $10M for the Last Mile Network-turnkey. The build out of the new MS ONE-Net network will occur within the City of Jackson and incorporated (4) areas of Hinds County, Mississippi: Bolton, Edwards, Terry, and Raymond.

j. Overall expected subscriber projections

This MS ONE-Net project will expand the fiber infrastructure and create a new wireless broadband system to support a blended audience of (72) Community Anchor Institutions (CAI) and underserved and unserved and economically distressed community households in five areas~ City of Jackson and the 4 surrounding areas noted in (i). The five year operating forecast (5 years of full operation) demonstrate projected subscriber use in YR1 estimated 20% of households, businesses, and over social institutions within the City of Jackson and the 4 surrounding areas with 5% growth subscriber growth projected each year to follow. These subscriber estimates will expand in proportion to the continued expansion of the MS ONE-Net network system itself. Network expansion will be realized through new Last Mile network extensions within the region and future capital expansions of the fiber and wireless routes. We encourage our commercial participants to use our fiber resources to provide last mile services within our communities and surrounding un- and underserved areas. As a City, we will provide focus to those providers who will propose broadband services for our Community Anchor Institutions (CAI) and underserved and unserved and economically distressed community households in the City of Jackson and the 4 surrounding areas. With several participating organizations and partnerships for the JCBI, MS ONE-Net will be a self sustaining enterprise.

k. Number of jobs estimated to be created or saved as a result of this project:

The majority of new network costs are related to engineering, construction and professional services. These services will be provided by local firms that will create jobs and serve as an economic stimulus to the region, while providing much needed high speed communication capabilities. Based on a $46M project and applying the “Simple Rule for Estimating Job-Years Created by Government Spending” per Council of Economic Advisor’s guide, we estimate that this network has potential to directly create between 75-100 professional service and construction jobs per area (about 422 total estimated), and indirectly a significant number of additional jobs related to the network components. Again, 5 areas will be positively impacted; City of Jackson and the towns of Bolton, Edwards, Terry, and Raymond. While it is difficult to accurately estimate the exact number, this Project will likely produce or save hundreds of jobs throughout the City and areas and is perhaps the single largest economic develop opportunity in