

## Broadband USA Applications Database

**Applicant Name:** Mississippi Economic Growth Alliance and Point of Presence, Inc.

**Project Title:** MEGAPOP FTTH/FTTP Project

**Project Type:** Last Mile Non-Remote

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### Executive Summary

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MEGAPOP's proposal presents a unique combination of proven public/private cooperation and support, a hybrid system that addresses both middle-mile and last mile broadband needs, and strategic utilization of open access community networks designed to obtain maximum leverage and benefit from the provision of "true broadband" access to homes, businesses and premises. One hundred per cent of returns realized by MEGAPOP will be re-invested in broadband technology, education and promotion in the State of Mississippi, resulting in a ten year return on investment of more than \$350,000,000. MEGAPOP's Broadband Initiative is based on a long-range vision and model that utilizes a scalable, holistic approach to providing access and promoting broadband utilization. The proposal involves three primary elements: • Expansion of the MEGAPOP's existing middle mile infrastructure created in 2004 in order to connect more rural, underserved communities to broadband services; • Provision of open access "Fiber to the Home/Fiber to the Premises" ("FTTH/FTTP") for homes and businesses in the following rural, underserved communities: Oxford, Holly Springs, Saltillo Ashland, Snow Lake, Baldwin, Booneville, Brewer, New Albany, Philadelphia and Pontotoc; and The expansion of existing middle mile infrastructure will involve extending MEGAPOP's current fiber optic network (operated and maintained by Telepak Networks, Inc., a Mississippi privately held corporation). This network, which is currently provisioned with two rings of DWDM OC-192 technology (10 Gbps) and one ring using Ethernet technology for an aggregate capacity of 30 Gbps has network switches or "points of presence" (PoPs) in Memphis, Holly Springs, Oxford, Marks, Tupelo, West Point, Columbus, Starkville, Philadelphia, Meridian, Hattiesburg, Jackson, and Yazoo City. The proposed extension of the backbone involved with this project will include a fiber optic run capable of sustaining OC-48 technology, scalable to increased loads in the future, from Tupelo, north through Saltillo, Baldwin, Booneville to Corinth; west to Walnut, Mississippi, then south through Ripley, New Albany and Pontotoc; finally connecting back to the existing middle mile infrastructure. Switching equipment or "points of presence" will be provided and maintained in Saltillo, Baldwin, Booneville, Corinth, Ripley, Ashland, Snow Lake, New Albany and Pontotoc. In addition, the middle mile infrastructure will be extended from Corinth to Iuka and then south to Meridian, to include the following rural communities: Tishomingo, Belmont, Fulton, Amory, Aberdeen, Brooksville, Macon, Scooba, and Lauderdale. The existing backbone infrastructure will also be extended (1) from Minter City on State Highway 8 to Ruleville and Cleveland and (2) from Holly Springs through Snow Lake, Ashland and connecting back to Falkner. The MEGAPOP infrastructure will be connected to the Internet and will be maintained and serviced by Telepak Networks, Inc. Using both the existing and newly extended middle mile fiber-optic infrastructure to connect these communities to the larger national broadband network, MEGAPOP will utilize a combination of new construction and over-

building of existing infrastructure to install fiber-optic cable that will pass 95% of homes and business premises in the eleven communities listed above. The first year (already engineered and “shovel-ready”) will include fiber optic builds in Holly Springs, Oxford and Slatton, Mississippi. The second and third years will provide for completing fiber optic builds in Ashland, Snow Lake, Baldwyn, Booneville, Brewer, New Albany, Philadelphia and Pontotoc. The proposed fiber build will support an “open access” network owned by MEGAPOP utilizing technology similar to that pioneered by Packet-Front, and providing access to both existing service providers and incentive to new providers. When completed, this FTTH/FTTP portion of the project will have in place a fiber optic network infrastructure that will provide access to 27,912 homes and almost 5,000 businesses in Mississippi. The completed project will provide a scalable model for replicating the same sort of networks in other communities throughout Mississippi.

MEGAPOP has a proven track record in handling a project of this scale, requiring multiple levels of cooperation among the public and private sectors. The first project undertaken by MEGAPOP, in cooperation with the Appalachian Regional Commission, Tennessee Valley Authority, Housing and Urban Development agency, Mississippi Development Authority, the cities of Oxford, Tupelo, Starkville, and Columbus, Lafayette, Lee, Oktibbeha and Lowndes Counties, and Telepak Networks, Inc., implemented a fiber-optic long-haul or “middle-mile” system that originated in Memphis, Tennessee, and ran through Holly Springs, Oxford, Tupelo, Starkville, Columbus, Philadelphia, Meridian, Hattiesburg and Jackson, Mississippi. MEGAPOP owns the infrastructure (or holds Indefeasible Rights of Use) in that part of the system originating in Cordova, Tennessee, through Meridian, Mississippi, with the balance of the fiber network owned by Telepak. Access to the entire network was negotiated and governed by a series of agreements and leases between MEGAPOP, Telepak and the local communities and has worked without complications or problems since being placed in operation in 2006. With regard to the proposed project, MEGAPOP has already expended more than \$80,000 for engineering, feasibility studies, surveys measuring community support and end-user/consumer interest and likely “take-rates”, and business modeling have already been completed with regard to the initial phase of the FTTH/FTTP portion of the project, which conservatively demonstrate not only positive cash flow from the beginning and economic sustainability within two to three years, but projected surplus income that can be reinvested in broadband training, promotion, and education as well as investing in the build out of additional communities throughout the State. Through utilization of existing middle mile fiber-optic infrastructure and construction of open access fiber builds as outlined above, MEGAPOP will provide access to high-speed, “true-broadband” (minimum data transfer rates for end users of no less than 10 Mbps symmetrical and up to 100 Mbps land-based) services to practically every home and business in the rural areas and communities involved in the project. Critical community and anchor institutions involved in the project include North Mississippi Medical Center, the largest rural hospital in the nation (and largest hospital in Mississippi), as well as the Baptist Memorial Hospital system, three of the State’s eight universities, five community colleges, three of the largest banking institutions in the State, as well as county and city governments and the largest economic development agency in North Mississippi. In addition, MEGAPOP, in partnership with Northeast Mississippi Public Power Association will cooperate with Oak Ridge National Laboratory (ORNL) and the Electric Power Research Institute (EPRI) in providing capacity for “smart-grid” technology to deliver electricity to consumers using digital technology to save energy, reduce cost and increase reliability. Studies (as well as the experience of companies with which MEGAPOP has partnered in the past) demonstrate that – at a minimum – 1.3 jobs will be created for

every one job created to build out and support the initial infrastructure. Using that model, MEGAPOP and its partners will create an estimated 300 jobs in connection with the proposed build, yielding a total of almost 700 jobs (direct and indirect) from construction and support of the initial infrastructure. The number of jobs created in connection with the proposed project is due in part to the fact that job creation will happen on a hyper-accelerated basis. The project is “shovel-ready” and has already been pre-engineered for the year one community fiber networks and the northern extension of the middle-mile infrastructure with the remaining work to be conducted on a “integrated project delivery” basis. Additional jobs will be created as new industries take advantage of the infrastructure created and maintained by the 700 jobs described in the foregoing sentence. Although this is a more long-term benefit, indications are that within the project timeline, 2 to 4 jobs for every job directly related to the project will be created in the technology sphere (2,800 jobs). MEGAPOP anticipates that it will sign up 2,149 residential and 757 governmental and business subscribers in year one; 8,485 residential and 1,502 governmental and business subscribers in year two, continuing to grow to 11,137 residential and 1,931 governmental and business subscribers by year three. The infrastructure cost of the system is estimated at \$65,405,000 (utilizing \$50,000,000 in loans/grants). The project will include 38 public safety, 172 critical and 49 anchor institutions. Long-range, MEGAPOP will not only generate jobs and investment in infrastructure in connection with this project, it will reinvest the revenue generated by the project in further expansion of the project throughout Mississippi. In ten years, the initial federal investment of \$50,000,000 will result in extended infrastructure worth \$346,081,000 (not including investment by privately held companies selling products over the MEGAPOP infrastructure). \$296,081,000 of that investment will go toward extending fiber to more than 194,000 households. \$50,000,000 will be used to expand the middle-mile infrastructure by more than 1,250 miles. Although there is no way to measure the exact dollar amount of the total economic impact of direct and indirect job creation, reinvestment in infrastructure and third party utilization of that infrastructure, it is safe to say that the true return on investment of the project will likely exceed \$750,000,000