

**Massachusetts Broadband Institute (MBI)
Round 2 BTOP Project Proposal Executive Summary**

MassBroadband 123

The Massachusetts Broadband Institute (MBI) applied to the National Telecommunications and Information Administration (NTIA) and received \$45.4M in funds to add to the \$26.2M in state matching funds to build **MassBroadband 123** – a robust, open access, middle mile fiber network covering over one-third of the state. The 1,101 mile network will connect 123 communities in western MA and the 1,392 community anchor institutions (CAIs) that serve them. **MassBroadband 123** is the transformative missing link to deliver comprehensive economic, educational and public safety benefits to this region hard hit by the national shift from manufacturing to a knowledge-based economy.

The MBI was created through the leadership of Governor Deval Patrick and the MA Legislature in 2008 to close the digital divide in Massachusetts. **MassBroadband 123** is the result of more than a decade of efforts by state and local groups, including the non-profit WesternMA Connect, to bring adequate broadband infrastructure to the region. The largely rural region with low population density and difficult topology has many unserved and underserved communities. Commercial providers cannot achieve a viable return on their investment and state funds alone are insufficient to solve this problem. Federal funds are needed to augment state funds in order to build this much-needed broadband infrastructure.

Supporting the MBI's comprehensive community approach is a broad coalition that includes small towns and large cities, home-based businesses and multi-national companies, schools from kindergartens to community colleges and research universities, and healthcare facilities from small clinics to regional hospitals. The support also includes key partnerships with Public Safety and other state agencies providing valuable services to the communities. All agree that, without **MassBroadband 123**, the region will continue to suffer economic hardship and be stuck in the breakdown lane of the information superhighway.

The service area contains over one million residents, 44,300 businesses, 2,100 CAIs, and 3,429 square miles. The middle mile network will be within 3 miles of over 98% of the households, CAIs, and businesses. This will dramatically change the cost equation and service options for last mile providers and allow for competitively priced residential and business class broadband services. Eight last mile providers have indicated their intent to use the network.

Completed in just over two and a half years, **MassBroadband 123** meets all of the statutory purposes of the NTIA's Broadband Technology Opportunities Program (BTOP). The service area covers all 4 unserved and 75 underserved census block groups. It contains 11 communities that meet the Round 2 BTOP Notice of Funding Availability (NOFA) definition of Economically Disadvantaged Areas, and 69 state-defined Economic Target Areas. **MassBroadband 123** will help to stimulate 2,975 jobs, 1,435 from building and managing the network and 1,540 from economic development in these disadvantaged areas and the rest of the region. The network will also directly connect most of the workforce development sites, and it will help vulnerable residents by serving over 125 public housing locations to help improve residents' access to broadband, and the skills and job opportunities it offers. The network will directly connect more than 65% of the CAIs in the region including most public safety sites, K-12 schools, libraries, health care providers and all community colleges.

This project will unlock the potential of the region's residents and allow the CAIs to better serve them and provide for their well being, enabling community colleges to produce a highly skilled workforce, hospitals and doctors to exchange patient information and public safety officials to access key databases.

Education is the key to helping the region grow and prosper. Today, colleges report many problems related to poor broadband, from high prices to inadequate service to difficulty in attracting quality staff due to lack of broadband in residential areas. **MassBroadband 123**, working with UMass MITI and others, will bring low cost, high speed Internet access to educational institutions throughout the region. Our project will reach all 10 community college campuses, and over 360 K-12 schools, libraries, and other institutions of higher education that need better broadband to serve their communities.

MassBroadband 123 will also provide critical service upgrades for public safety. The state's Executive Office of Public Safety and Security (EOPSS) has 85 public safety locations with inadequate service and hundreds of other public safety facilities that have no access. Interoperability among agencies has gaps due to the lack of infrastructure to tie them together. New public safety applications are being deployed, but without adequate bandwidth these sites will not be able to access them. EOPSS has partnered with the MBI and is contributing \$3.1M in matching funds to help solve this problem. Once completed, **MassBroadband 123** will bring service one thousand times faster than their current service to 378 public safety locations in the region.

With advances in healthcare, including electronic health records and tele-medicine, citizens in the region are being left behind. The MBI is partnering with its sister division, the Massachusetts e-Health Institute (MeHi) within the Massachusetts Technology Collaborative (MTC), which recently won two federal grants totaling \$24M to deploy electronic medical records. **MassBroadband 123** will connect all critical care hospitals in the region and over 40 other healthcare providers, bringing them secure connections that will greatly increase their ability to exchange health information with regional and other teaching hospitals in Massachusetts.

MassBroadband 123 is designed to offer the best possible value in terms of reaching citizens and businesses at the lowest possible cost. The MBI is committed to the principles of openness, nondiscrimination and customer choice. Everything about **MassBroadband 123** – from technical standards to operating policies, from financial terms to physical location of facilities – reflects that commitment. The middle mile fiber optic network provides a number of resilient rings, carefully routed to maximize use of existing aerial rights-of-way to bring fiber close to CAIs, businesses and population centers through 22 interconnection points. It includes high strand counts and slack loops spaced frequently throughout the network to facilitate easy interconnection. It uses Indefeasible Rights of Use (IRUs) where possible to lower costs and avoid overbuild. The network will provide diverse routing sufficient to meet public safety's high availability requirements to multiple Internet Points of Presence (POP). The primary in-region POP is in Springfield, and additional POPs are reached through fiber obtained as IRUs from our partners NEREN (Northeast Research and Education Network) and UMass MITI.

The MBI is a division of MTC, the state's technology economic development agency. MTC has a 28-year track record of successfully managing complex public / private programs, and has administered over \$450M of public funds to stimulate economic development.

The MBI has a strong team in place managed by a hands-on telecom leader who has successfully run an \$87M division of a public company. The team includes a seasoned network program manager, project managers, advisors, and strategic partners. The Board includes MIT Professor David Clark, a father of the Internet, as well as the state's Telecommunications Commissioner and the state's CIO. The MBI has also formed an Advisory Committee comprised of leading network experts to provide guidance on the network policies and management decisions. It will hire highly qualified network build contractors and a network operator through rigorous public procurement processes. The network operator will manage all elements of running the network from provisioning and monitoring to sales, billing and support.

The MBI team has completed the I-91 fiber deployment project. This project is an important component of **MassBroadband 123** and was cited in the National Broadband Plan as a model for leveraging transportation projects to deploy broadband infrastructure.

The need for a high speed, middle mile broadband network is great, and the catalytic impact on the region will be profound. The **MassBroadband 123** project is the only way to bridge the divide. Without federal funding, the region will continue to lack the single most essential tool to reverse its downward economic spiral. The MBI is uniquely positioned to begin building this network immediately.