

Broadband USA Applications Database

Applicant Name: OpenCape Corporation

Project Title: OpenCape Corporation Middle Mile Project

Project Type: Middle Mile

Executive Summary

OpenCape Corporation is a 501c(3) nonprofit corporation seeking \$32,000,000 in grant funding from the Broadband Technologies Opportunity Program (BTOP) to build and operate an open access middle mile network. a) Opportunity the proposed system seeks to address Cape Cod and the Islands have seen limited investment in broadband infrastructure largely because the population density is insufficient to deliver a return on investment consistent with traditional provider business models and share holder demands. RCN Metro Optical Networks (RCN) states it would not enter the middle mile market place without an infusion of stimulus funds. Verizon has stated it has no plans to introduce its FiOS service to the Cape and Islands. The proprietary nature and closed access of the limited fiber optics in the region creates a further barrier to entry. The result is a lack of competition that in turn results in a lack of availability of broadband in low density areas, inadequate capacity, and a high cost of service for consumers and anchor institutions. The Cape, Islands and southeastern Massachusetts are also the most vulnerable region in the state to hurricanes. OpenCape's proposed middle mile network solution will provide the necessary redundant communications backbone needed in times of emergency. b) A general description of the proposed funded service areas The OpenCape network proposed funded service area consists of the entirety of Barnstable, Dukes and Nantucket counties plus the towns of Plymouth, Carver, Kingston, Plympton, Middleboro, Bridgewater, Halifax, East Bridgewater, Brockton, Wareham, Marion, and Mattapoisett in Plymouth County. The OpenCape service area consists of over 15,000 census blocks. There are over 175 unserved or underserved census blocks identified within the OpenCape service area. OpenCape, by necessity, must build further connections to the Internet in Providence, RI and to Boston through Plymouth and Brockton. Though OpenCape has not developed a comprehensive solution along the South Coast, OpenCape's fiber will be used to develop a later comprehensive solution in that region as well. Unemployment in South Coast cities such as Fall River is over 14%. UMass Dartmouth is developing plans to model the OpenCape effort along the South Coast using the OpenCape network as a foundation. c) Number of households and businesses passed. The OpenCape service area contains approximately 321,204 households representing approximately 515,648 individuals as well as 62,129 businesses. d) Number of community anchor institutions, public safety entities, and critical community organizations OpenCape will connect over 70 anchor institutions to the network using laterals as part of its initial build-out. Highlights of these include twelve emergency shelters (schools), thirty libraries, five colleges, six academic research facilities, and eighteen town or public safety buildings. The OpenCape path also permits many additional anchor institutions the ability to rapidly obtain service from the network including seven hospitals, two additional higher education institutions, eight additional libraries, ten county, state or federal institutions, five commercial/industrial

centers, and potentially over 270 public safety and educational facilities. Letters of support have been received from every town and school district on Cape Cod and the Islands, police and fire chiefs associations, nearly all hospital CEOs and CIOs, the presidents of all of the public higher education institutions in the region, the southeastern Massachusetts federal and state legislative delegations, the chamber of commerce, and many other stakeholders in the region. e) Proposed services and applications for the proposed funded service areas and users. Specifically, the project will execute on four activities and applications: 1) Build capacity by establishing an open access middle mile network spanning the entire Cape and connecting to core Internet backbones in Providence and Boston; 2) Build needed public safety redundancy through a microwave wireless backhaul network spanning the entire Cape and Islands and connecting to fiber leading to Boston and Providence; 3) Establish a regional datacenter; 4) Establish regional pilot applications in regional GIS, pandemic network, and library interconnection. f) Approach to addressing the non-discrimination and interconnection obligations OpenCape is committed to the creation of an open access vendor neutral network. This commitment has been a hallmark of the OpenCape concept since its inception in 2006. OpenCape acknowledges and concurs with the principles of non-discrimination and interconnection as set forth in the NTIA notice of funding availability (NOFA). OpenCape will publish its commitment on its web site, and its operating partner, RCN, must accept these same obligations. RCN will ensure that its customers can: a) access the lawful Internet content of their choice; b) run applications and use services of their choice, subject to the needs of law enforcement; c) connect their choice of legal devices that do not harm the network; and d) choose between competing network providers, application and service providers, and content providers. g) Type of broadband system that will be deployed (network type and technology standard). The OpenCape proposal consists of a core fiber backbone on Cape Cod with extensions to two major regional network connection centers, numerous fiber optic laterals extending off of the backbone and backbone extensions, a high capacity optical transport system, a microwave radio overlay and a collocation center. All of these elements combine to provide a robust, high capacity communications infrastructure for our service area. Carrier grade electrical and electro-optical components will be used throughout the project. Fiber optic based services will range from traditional bandwidth based offerings to dedicated wavelengths of light to dark fiber leases. The OpenCape collocation center will be designed and built following current best practices for moderately sized data centers with average power needs. The facility will serve as the focal point of network operations and provide leased collocation space for public and private organizations in the region. h) Qualifications of the applicant that demonstrate the ability to implement and operate a broadband infrastructure, and/or be a sustainable broadband services provider. OpenCape Corporation is a 501c(3) nonprofit corporation that has been working on the project for nearly three years. Its 11-member board is comprised of highly experienced individuals in the business, education, government, and technology sectors. Over three years, it has conducted ongoing research with stakeholders across the region, developing a business and engineering plan that both meets regional needs and is sustainable over time. OpenCape has chosen to combine its regional understanding and mission with a partner's existing capabilities, drawing on the strengths of an established middle mile operator. In July 2009, OpenCape's research and analysis led it to identify RCN Metro Optical Networks (RCN) as its primary operating partner through a competitive process. RCN has a proven track record in middle mile construction and operation. Specific to the grant, compliance and reporting will be handled in partnership with the Woods Hole Oceanographic Institution, which has

decades of experience in significant federal grants management. i) Overall infrastructure cost of the broadband system. The project cost, to build the infrastructure as outlined in this grant application, is \$40 million. OpenCape has thus far secured commitments for \$8 million in matching funds from the Massachusetts Broadband Institute (\$5 million), RCN Metro Optical Networks (\$2 million), and Barnstable County (\$1 million). j) Overall expected subscriber projections for the project. OpenCape's business strategy is to address the transport portion of the telecommunications value chain and to provide retail commercial services. It would serve as an open access wholesaler for organizations that use or resell large blocks of bandwidth and related services. Sample customers include cellular carriers, anchor institutions such as hospitals, schools and municipalities, and last mile providers, both incumbent and new entrants. k) Number of jobs estimated to be created or saved as result of this project. The OpenCape project will create 233 jobs in the equipment, construction and manufacturing sectors and an additional 194 indirect jobs. The basis of these estimates is the work of Dr. Raul Katz, Director of Business Strategy Research at the Columbia Business School, who estimated the impact of broadband stimulus spending in February, 2009. In addition to direct and indirect jobs associated with network construction and operation, the network supports job growth by enabling the diversification of the regional economy beyond traditional seasonal occupations. These emergent areas include the creative economy, microbusiness and entrepreneurship, green energy development, and the rise of a distributed workforce. In the June 2009 regional Comprehensive Economic Development plan approved by the Economic Development Agency (EDA), the open access middle mile infrastructure, as defined by OpenCape, was identified as a key enabler of this essential economic diversification.