

## Broadband USA Applications Database

**Applicant Name:** Kodiak-Kenai Cable Company, LLC

**Project Title:** Northern Fiber Optic Link (NFOL): Connecting America

**Project Type:** Middle Mile

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### Executive Summary

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a) Opportunity the Project Seeks to Address. The rural communities of western and northern Alaska are among the most disadvantaged and remote in the U.S. Joblessness ranges up to 70%, and the poverty rate reaches as high as 65%. See Supplemental Information 3, Tab D. These communities are isolated by rugged terrain, harsh weather, and the lack of any road or rail system connecting them to an urban area. As a result, they have few of the educational, healthcare, and economic opportunities taken for granted by most Americans. All communications traffic into or out of these communities (except Prudhoe Bay) – internet, telephone, and television – is now dependent on satellite service. Consequently, internet access is limited, sporadic, and very expensive. Without reliable internet access, new businesses are difficult to establish, and the existing businesses lack reliable internet service for marketing, research, and transacting with customers and suppliers. Moreover, educational and job training programs are severely impaired by the expense and poor performance of videoconferencing via satellite. See Supp. Info.3, Tab C & Supp. Info. 2, Tab J. The Recovery Act presents a unique opportunity to make a profound, sustainable change for the people of this region. Within two years of funding, these communities will have reliable, high-quality access to every internet-based resource available to address these problems, including job training, counseling, telemedicine, and educational programs, at a fraction of the cost of satellite-based service. This is a key region with respect to climate change, both as a scientific outpost on the Arctic Ocean and Bering Sea, and as a region already experiencing substantial impacts. These impacts have broad implications for the environment and national security. A June, 2009 report by the U.S. Global Change Research Program notes that Alaska has warmed at more than twice the rate of the rest of the country over the last 50 years. See full report at <http://www.globalchange.gov/>. See Supp. Info. 3, Tab H, for chapter on Alaska. Researchers in Alaska studying climate change, fisheries, and oceanic conditions suffer from the same lack of broadband connectivity as the residents and businesses of the region. The NFOL system will help solve this problem by including three state-of-the-art, four-port subsea branching units for scientific purposes. Among other benefits, this will allow for the collection of climate and ecosystem data from the Arctic Ocean and the Bering Sea on a real-time basis, greatly expanding our knowledge of the region. See letters from NOAA, included in Supp. Info. 2, Tab L. The NFOL project will thereby leverage Recovery Act funding received by NOAA and the National Science Foundation for climate change research. In fact, the project will leverage Recovery Act and other federal and state programs, including those relating to healthcare, renewable energy development, and Smart Grid, by providing the broadband connectivity essential to their success. See Response to No. 42. b) Description of Proposed Funded Service Areas. The Kodiak-Kenai Cable Company (KKCC), an SBA 8(a) company, proposes to serve an area of approximately 298,000 square miles, the largest underserved

region of the U.S. Constituting nearly 45% of Alaska's total territory. It is completely rural, and most of it is unserved. See maps in Supp. Info. 1, Tab B. The proposed funded service areas include those communities that will immediately benefit because of their proximity to an NFOL cable landing station; communities beyond the proposed funded service areas will benefit in the future once the terrestrial broadband infrastructure is fully built out. c) Number of Households and Businesses Served. Through interconnection with last-mile providers at its landing stations, NFOL will immediately provide connectivity to 12,066 households and 1,783 businesses. Once the infrastructure is fully built out, up to 17,288 households and 2,468 businesses will be served by the NFOL system. See Supp. Info. 3, Tab A. The regional population increases dramatically in the summer due to commercial fishing and other seasonal employment, with a corresponding increase in the demand for service. d) Number of Community Anchor Institutions Served and Involved with the Project. Initially, the number of anchor institutions served and benefited includes: 70 health care facilities (clinics, regional clinics and hospitals); 79 elementary and secondary schools; 17 public libraries; five colleges ; 112 public safety entities (law enforcement, fire and rescue); 117 tribal organizations (village councils and Alaska Native village corporations); and 118 utility systems (water, sewer, landfill, electric). See Supp. Info. 3, Tab A for list of community anchor institutions. Following infrastructure build-out, the total number of institutions that will benefit from deployment of NFOL increases to 144 health care facilities, 152 elementary and secondary schools, 38 public libraries, five colleges, 284 public safety agencies, 265 tribal organizations, and over 250 utility systems, as well as federal and state agencies. NFOL has the support of State-recognized representatives of every region to be served, along with letters of support from many other organizations. See Supp. Info. 2, Tabs F-M. e) Proposed Services and Applications. NFOL will be a 3,550-mile fiber optic submarine cable system along the western and northern coasts of Alaska. It will extend KKCC's existing Kodiak-Kenai Fiber Link (KKFL) system from Kodiak Island to major commercial fishing ports in the Aleutian Islands, then turn northward along the west coast of Alaska, and terminate in the Arctic at Prudhoe Bay. There, carriers will be able to interconnect with existing overland telecommunications facilities that extend southward to Anchorage. The NFOL system will provide broadband backbone capacity to last-mile carriers at much lower cost, on an equivalent per kilobit basis, than today's inadequate satellite transport. This will enable last-mile carriers to offer the huge amounts of broadband capacity necessary to support interactive, high-definition distance learning and telemedicine applications, as well as residential and business high-speed internet access and voice over IP. f) Non-Discrimination and Interconnection Obligations. As a middle-mile project, NFOL will provide broadband backbone services to last-mile providers rather than to end users. KKCC embraces and adopts the FCC's Internet Policy Statement and the network openness principles and requirements set forth in the NOFA. KKCC will operate NFOL as a "carrier's carrier" on a competitively-neutral basis; and will contract with carriers for capacity on a non-discriminatory basis. g) Type of Broadband System that will be Deployed. The NFOL will be a fiber-optic submarine cable system of trunk-and-branch configuration, comprised of 14 repeatered and four non-repeatered segments, and 11 cable-landing stations. The system will be fully redundant, with each trunk segment containing two fiber pairs and each branch segment containing four or five fiber pairs. The initial operating capacity of the system will be 52 wavelengths, each with a 10 Gbps data rate on a single fiber pair. The final operating capacity is scalable to 96 wavelengths per fiber pair, for a total system capacity of 1.92 Tbps. The design life of the system is 25 years. h) Qualifications of Applicants. KKCC has a proven track record in deploying and

operating submarine fiber-optic cable networks. Its existing 600-mile KKFL system was built on time and within budget. Since KKFL initiated service in January 2007, it has operated without interruption, and capacity sales have allowed KKCC to pay down its debt from \$16 million to \$2 million. The same KKCC management team will oversee the construction, deployment, and operation of the NFOL system. In addition, KKCC has retained Tyco Telecommunications, the leading manufacturer of submarine fiber optic cabling in the U.S., to construct the system, and an equally qualified provider to perform the marine survey phase of the project, Fugro USA. Tyco, in its over 50 years of operation, has designed, manufactured, and installed more than 80 undersea fiber optic systems around the world. Fugro has surveyed more than 2.6 million square kilometers of seafloor, to depths of over 9,500 meters, making it one of the most experienced deep-sea survey companies in the world. OTZ Telephone Cooperative and Bristol Bay Telephone Cooperative are joining KKCC as co-applicants. See Response to No. 41 for a description of their supporting roles.

i) Infrastructure Cost of Broadband System. The total cost of deploying NFOL will be \$431 million, of which KKCC is requesting a BIP grant of \$172.3 million and a loan of \$172.5 million, or a BTOP grant of \$216 million.

j) Expected Subscribers. As a middle-mile backbone system, NFOL will offer capacity to providers of last-mile services, not directly to end users. KKCC is engaged in confidential negotiations with carriers for the sale of capacity on the system in increments of OC-48 to OC-192. These discussions include Alaska carriers, as well as national and international companies planning to enter the Alaska telecommunications market. KKCC will pass through the benefit of Recovery Act funding by substantially reducing its pricing for capacity on the NFOL system. In turn, KKCC will require all carriers receiving capacity to provide community anchor institutions a 25% discount from their advertised rates.

k) Estimated Number of Jobs Created or Saved by Project. KKCC estimates that the NFOL project will create or save approximately 5,800 jobs in 23 states. Supp. Info. 1, Tab B. KKCC's confidentiality request is included at Supp. Info. 3, Tab I.