Access to broadband is a critical enabler of participation in modern society. This is especially true for Native and Tribal users in remote areas, who have been left behind in so many areas of modern development. The FCC states that broadband penetration in Tribal areas is less than 10%, compared to a national average of 65%, and FCC Chairman Julius Genachowski recently called broadband penetration in Tribal areas 'a disgrace'. Market forces are not providing Alaskan and Native citizens with the access they need to participate in modern society, obtain health care, or even use basic public services. Native Broadband is led by Native shareholders to provide upgraded, and in some cases the first ever, middle mile broadband to over 300 remote, difficult-to-reach communities in Alaska and several dozen major reservations in the Western US. The project targets community anchors that are central access points to public services, a number of whom are represented in this application. Native Broadband’s co-applicant is Rivada Sea Lion (RSL), an RUS ARRA Round 1 last mile winner with the SW Alaska Broadband Rural Expansion (SABRE) project bringing 4G wireless to 45 rural Alaskan communities. RSL's last mile service will use Native Broadband's middle mile service for backhaul, maximizing efficiency and taxpayer benefits through the ARRA. RSL is also applying for a Round 2 grant that will use Native Broadband and will further leverage taxpayer dollars. Providing broadband to Alaska's remote communities presents unique challenges due to climate and topography. It is twice the size of Texas with a population slightly larger than Vermont. With the exception of communities accessible from Anchorage and a few near Fairbanks and the coast, the cost of running fiber or microwave across thousands of miles of mountains and tundra makes terrestrial connectivity nearly impossible. The RUS acknowledged this when they awarded RSL the last mile SABRE project, whose 4G service will be backhauled via satellite. No other backhaul technology is feasible in these regions. The challenges are complicated by an acute shortage of affordable backhaul capacity as providers such as StarBand and AT&T Alascom continue to shrink their footprint in the State. That capacity that is available remains prohibitively expensive. Native Broadband is partnering with last mile providers and community institutions to deploy middle mile broadband in areas where satellite backhaul is the only option. Native Broadband will provide ground hardware as well as purchase dedicated transponder assets on a geostationary satellite, to ensure that the capacity is affordable and available for Native Broadband's stakeholders. We will buy transponder assets from a company placing a satellite at an orbital location ideal for serving Alaska and the Western US. Native Broadband is purchasing a large portion of the satellite's capacity to provide over 8 Gbps of middle mile throughput to our partners and institutions. Without Native Broadband, the new satellite will not be deployed in this location and will not direct its coverage beams to rural Alaskan and Tribal areas, since mainstream satellite companies focus their fixed infrastructure on the heavily populated suburban and
exurban areas of the lower 48. Satellite backhaul was chosen for two key reasons: 1. For the remote
locations that we serve, no terrestrial options are available. Satellite is the connectivity option of last
resort to bring these citizens into the modern age. 2. Satellite middle mile backhaul has advanced
considerably compared to even five years ago, providing an all-IP-over-satellite environment designed
for latency sensitive applications. These systems can affordably provide voice, video, and high speed
data approaching telco-quality service. Opportunity Rural Alaska and Tribal areas of the Western US lag
in nearly every development indicator including broadband access. Clear barriers to a market solution
exist in these locations. Income levels and demographics do not justify investment, and both Alaska and
remote Western US reservations have geographic barriers which massively drive up the costs for
terrestrial broadband infrastructure. Service Area Description The Native Broadband project will provide
low cost middle mile broadband to vast rural and remote unserved areas of Alaska, connecting over 300
communities with 150,000 people, and several dozen Tribal reservations in the Lower-48 with 393,000
people, and enabling last mile providers and community anchors, such as our RUS-winning partner RSL,
to provide life-changing access. The service area covers over 570,000 square miles (over 2x the size of
Texas) of largely inaccessible, highly remote terrain. Households and Businesses Broadband will be
provided via last mile partners and community anchors to 49,000 households and 150,000 citizens in
Alaska, and 21,100 businesses. Broadband will be provided via middle mile community infrastructure to
122,000 households and 393,000 citizens in Tribal areas of the Lower-48, and 19,400 businesses.
Community Anchor Institutions The project involves 1,850 community institutions, including 490
schools, 390 libraries and 6 community colleges. The project has a focus on anchor institutions as a way
to bring the best in modern broadband, including videoconference consultations and distance learning,
into Native and rural communities. Proposed services and applications The network supports bandwidth
speeds up to 10 Mbps for community institutions and other users, which supports distance learning;
telemedicine consultations; videoconferences; streaming video for K-12 education; and technical
training to upgrade skills, among others. Reliable bandwidth at key anchor community institutions will
support all applications used in served areas of the US. The network will support voice, video, data, and
videoconferencing. Nondiscrimination and interconnection obligations Native Broadband will be a
provider of full and open broadband connectivity. We are a provider-agnostic, application-agnostic,
open data pipe for our stakeholders. We fully commit to all principles contained in the FCC's Internet
Policy Statement Type of broadband system Native Broadband will provide coverage of all of rural
Alaska and all of the selected Lower-48 Tribal areas, not just high income and natural resource-rich
regions. Backhaul will be based on latest best-of-breed open architecture using an IP over satellite
backhaul environment optimized with packet-by-packet traffic management for latency sensitive
applications. DOCSIS, TDMA and other proven point-to-point and multipoint technologies will be utilized
as well as DVBS-2 and LDPC. The system supports improvements and everything above the transport
layer can be optimized as technology improves. Qualifications Native Broadband's team has 200 years of
combined network and rural broadband design, engineering, management, regulatory, operations and
financing experience. Among the team members are people who have started major communications
companies, and others who have spent their working lives providing broadband services via satellite to
Alaska and other rural areas. Infrastructure cost Native Broadband is providing $65MM in funds from
private sources and is requesting $150MM in matching grant funding from NTIA. The total cost of the
project is $215MM, and Native Broadband is providing 30%. This total cost includes ground equipment,
transponder purchase, and all other supporting facilities and equipment. Expected subscriber projections Native Broadband conservatively estimates that its middle mile service will result in 1,100 community anchor institutions receiving critical broadband services. In addition Native Broadband will enable service directly to 30,000 households and 3,200 businesses. These are conservative projections based on achieving sustainability and higher subscriber numbers are possible. Number of jobs created or saved The project will create 4,530 jobs. On-site installers, technicians, and IT operators will service the infrastructure and manage ongoing operations in each anchor institution for the life of the project. Trainers will assist users in learning to utilize broadband. Indirectly, the asset purchase and infrastructure build will fund design, construction and launch of the satellite and various ground systems which create new jobs. Finally, access will create opportunities for commerce fostered by entrepreneurs and business incubators. Many skilled positions will be enabled by telemedicine, distance learning, and integrated public safety services. In addition, the enhanced broadband penetration that Native Broadband will enable will create an estimated 20,000 jobs.