

**Agency: Commerce, Community and Economic Development****Grants to Municipalities (AS 37.05.315)****Grant Recipient: Gustavus****Federal Tax ID: 27-0085777****Project Title:****Project Type: Planning and Research****Gustavus - Community Broadband Network****State Funding Requested: \$235,000****House District: 5 / C**

Future Funding May Be Requested

**Brief Project Description:**

Develop funding-ready plan for the last-mile community broadband network that will last 20 years or more, deliver coverage throughout the community of Gustavus, accommodate growth in population and network use, is reliable, is cost-effective, and fit into or contribute to regional and state-wide strategies for bringing broadband Internet service to remote Alaska communities.

**Funding Plan:**

Total Project Cost:	\$235,000
Funding Already Secured:	(\$0)
FY2012 State Funding Request:	<u>(\$235,000)</u>
Project Deficit:	\$0

*Funding Details:*

2005: \$4,000 from subscriber fees for wireless design by Borealis Broadband

2010-2011: \$32,000 from subscriber fees and city funds to build multipurpose communications tower to be completed by May 31, 2011.

**Detailed Project Description and Justification:****Purpose and Overview**

This project is the next step towards achieving state and national broadband goals for rural, unserved areas. It will result in a detailed plan for Gustavus and similar communities to reap the economic, health, safety, and quality of life benefits that accrue from broadband Internet access.

**The planned network:**

Is excellent now and still good in 20 years, so it will support all current and future network applications, especially multimedia including high-definition bi-directional real-time video.

High performance: 80 Megabits per second (Mbps) or better actual throughput from the community network center to every subscriber node, and 20 Mbps back. Internet speeds depend on a middle-mile connection outside the scope of this plan. This goal is slightly less ambitious than the national broadband plan's goal of 100 Mbps to 100 million American households by 2014 in recognition of severe challenges and high costs faced in rural Alaska communities.

High quality of service (QoS): Between every node and the network center: latency <10 ms; jitter <15% of average latency; and packet loss <0.01%.

Manageable: At a minimum, supports IPv4 and IPv6 layer 3 protocols. Supports prioritization of packets to guarantee QoS. Customer premises equipment provides firewall and diagnostic functions.

Delivers universal coverage to every home, business, and other facility in the community.

Is expandable to accommodate population growth and economic development for the next 20 years.

Is reliable: Meets the quality of service described above 99.99% of the time for core network components, 99.9% or better for every node.

Is regional: Either fits into a regional communications strategy, or contributes to one.

Is cost-effective: Achieves the lowest total cost of ownership while meeting the above goals.

A last-mile model community broadband network will improve Gustavus and Glacier Bay health and safety, promote economic development and diversification, curb out-migration, lower cost of living and cost of business, strengthen the local community, improve local government efficiency, transparency, and participation, and improve long-term sustainability and viability at a time when communities without broadband Internet access are being gradually cut off from modern society, marginalized, and diminished.

#### Planning Phase

Identify the organizational and technical strategy that will best meet the project's goals. Hire consulting planner(s) and/or engineer(s) to conduct the following study:

Consult and cooperate with these organizations and others as needed to determine how the local community's last-mile network can best leverage larger broadband efforts and/or contribute to them by developing a model that could be used in other communities. Ideally, the plan and model design resulting from this project would be included in or would tier down from a regional broadband plan.

Government and NGO efforts to promote broadband on a regional, state-wide, or national basis

National Broadband Plan (FCC)

Community resource inventory (USDA)

Alaska broadband mapping program (AK DCCED)

Southeast Conference

Similar communities that face the same need, especially in the same region. What have they learned that might help us, and how might this planning effort help them?

Incumbent LEC (ACS)

Other private providers

GCI

AT&T

AP&T

Rainforest Telecom

Other public entities pursuing or operating broadband connections in the community

Gustavus Public Library, Alaska State Library, OWL

Gustavus Public School, Chatham School District

Public Involvement must include at least two local open houses/public hearings where the public may learn about the planning effort and raise concerns that should be addressed during the planning or design phases. At a minimum, issues to address include

Cost of the service to the customers

Any health, environmental, and esthetic concerns

Spread of invasive species

Effect on marbled murrelets if trees are cut near the Gustavus Communications facility

Impact on local businesses and individuals  
 Crowding in underground utility corridors  
 Wireless interference

At a minimum, consider and compare these last-mile technologies:

DSL  
 Cable  
 Fiber  
 Wireless  
 900 MHz  
 700 MHz  
 3G  
 4G

Deliverables from the planning phase will be

Detailed comparison of alternative technologies, including

Description of the technology to be used, and what facilities and equipment would be needed to build a last-mile network using each technology.

Capital and operating cost estimates sufficiently accurate to differentiate between the options.

QoS to be delivered by each technology

Issues and concerns for each technology

A recommendation and justification for the optimum technology to be used

A recommendation and justification for who should build, own, and operate the last-mile network

A description of how the recommended strategy meshes with regional and state-wide broadband strategies

#### Design Phase

The city council shall take public testimony and choose from the alternatives developed during the planning phase. The design phase begins once the council has accepted an alternative. Deliverables from the design phase shall be

Construction plans and specifications for the last-mile network, unless another party will be designing their own network

Detailed engineer's cost estimates

A request for quotations for construction of the last-mile network, or a draft agreement with a cooperating partner such as a telecommunications provider

Plans and designs funded by this project shall be public records under Alaska state law, and shall be published on the Internet for free, public, anonymous access.

The study will not result directly in any ongoing maintenance and operation costs. If a network is built, it may be operated by the City of Gustavus dba Gustavus Community Network, as they have managed their existing network for 14 years. Revenues will be higher and costs lower (cheaper Internet backhaul, no leased line to city hall, more reliable network, no lines for dialup). Administration may be contracted out as it currently is to a computer consulting company. It is also possible the study will result in a recommendation that another party would own and/or operate the network but that cannot be anticipated at this point.

**Project Timeline:**

Planning phase: July 1, 2011 to November 30, 2011, partial payment to contractor upon completion.  
Design phase: December 1, 2011 to May 31, 2012, final payment upon delivery of complete design.

**Entity Responsible for the Ongoing Operation and Maintenance of this Project:**

City of Gustavus, dba Gustavus Community Network

**Grant Recipient Contact Information:**

Name: Kapryce Manchester  
Title: City Clerk  
Address: PO Box 1  
Gustavus, Alaska 99826  
Phone Number: (907)697-2451  
Email: clerk@gustavus-ak.gov

Has this project been through a public review process at the local level and is it a community priority?  Yes  No

**Resolution of the City of Gustavus, Alaska  
Resolution No. 2011-09**

**A RESOLUTION IN SUPPORT OF THE PROPOSAL TO ‘PLAN AND  
DESIGN A MODEL SUSTAINABLE COMMUNITY BROADBAND  
NETWORK’**

**WHEREAS**, city-owned Gustavus Community Network (GCN) has provided Internet service to the community of Gustavus since 1996 and has a solid record of creativity and self-sufficiency; and

**WHEREAS**, existing dial-up internet service provided to the majority of GCN subscribers is sorely inadequate for today’s media-rich Internet applications, much less those to come, resulting in a substantial decline in GCN subscribers; and

**WHEREAS**, private satellite internet services available in Gustavus suffer from high-latency, high cost, low performance, low reliability, and do not meet the FCC definition of ‘broadband’; and

**WHEREAS**, upgrading the community Internet service to broadband has been identified as a critical infrastructure need for the City of Gustavus and received ‘strong positive’ support as a capital infrastructure project in the ‘City of Gustavus Strategic Plan 2005’; and

**WHEREAS**, 84% of respondents to the DCRA sponsored ‘Gustavus, Alaska: 2008 Community Survey Report’ identified improvement of Internet connectivity as an important infrastructure project, placing second only to a new dock in importance on a list of 25 infrastructure projects;

**AND NOW THEREFORE BE IT RESOLVED**, the Gustavus City Council, in an effort to promote economic development, curb out-migration and improve community health and safety by providing the fastest, most reliable and most affordable last-mile fiber optic broadband Internet service, supports the submission of the proposal to design and plan a ‘Model Sustainable Community Broadband Network’ Capital request, and designates it the community’s top unfunded capital project priority.

PASSED and APPROVED by the Gustavus City Council this 10 day of February, 2011.

  
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Jim Mackovjak, Mayor

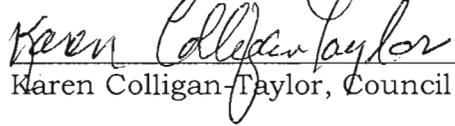
  
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Louis Cacioppo, Vice Mayor

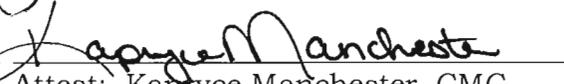
  
\_\_\_\_\_  
Melanie Lesh, Council Member

Via Teleconference  
\_\_\_\_\_  
Tim Sunday, Council Member

Via Teleconference  
\_\_\_\_\_  
John Nixon, Council Member

  
\_\_\_\_\_  
Joe Lassiter, Council Member

  
\_\_\_\_\_  
Karen Colligan-Taylor, Council Member

  
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Attest: Kapryce Manchester, CMC  
City Clerk