October 2009 Quarterly Data Report
Alaska eHealth Network
Prepared by: Alaska Native Tribal Health Consortium

Ref: APPENDIX D – Pages 73-75 of Federal Communications Commission FCC 07-198

Alaska eHealth Network Update:

This report provides an update on the Alaska Rural Health Care Pilot project from July 31, 2009 through October 30, 2009 as well as a complete report on the project. Activity reported on during this quarter includes the following: Network Design update.

Brief Project Summary:

The Alaska Rural Health Care Pilot proposal was developed through a partnership of health care providers, federal and state health agencies, insurers, and consumer groups. Funds from the FCC RHCP will finance the design and development of a statewide broadband network (the Alaska eHealth Network, or AeHN). Comprised primarily of rural health care practitioners, the Alaska eHealth Network will unify and increase the capacity of disparate healthcare networks throughout Alaska in order to connect with urban health centers and access services in the lower 48 states. Alaska Native Tribal Health Consortium has been designated by the partners to act as interim project manager until replaced by a public-private partnership which will manage the AeHN in the long-term. AeHN infrastructure development requirements are to:

- Unify separate healthcare networks throughout Alaska and supply rural health providers with connectivity to urban health centers for the purposes of telehealth and information exchange.
- Provide capability for managed video and access to health networks and services in the lower 48 states through the use of Internet2 (I2) or similar services.
- Test innovative methods of funding, investigate ways to increase network efficiencies, and develop a strategy for uninterrupted rural connectivity, including a sustainable economic model.

The Alaska eHealth Network will facilitate the exchange of critical health information between health providers and support telemedicine services, including the transfer of high resolution images for patient care; videoconferencing; and Voice-over-Internet applications.

Network Design Update:

As stated in the previous report, GCI Communication Corp. was selected as the vendor for the assessment and design phase in December 2008. A contract was signed on February 20, 2009 and the 466 application process was completed on March 7, 2009. A Funding Commitment letter was issued on March 20, 2009.

The Design Phase began following the issuing of the FCL. A statewide team of healthcare providers and IT management and staff was convened to review the work performed by the contractor and to advise the Project Manager and the contractor on the network requirements. A secure website was set up for the exchange of draft network documents. The website included a forum for the exchange

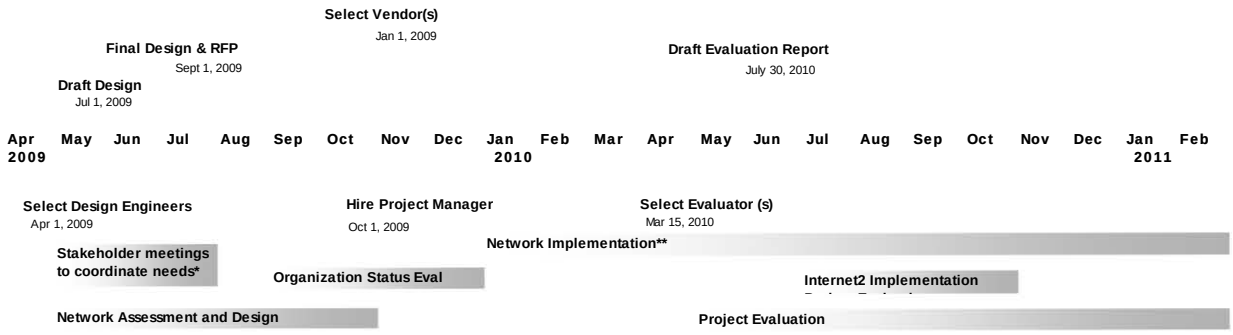
of ideas and concerns regarding the project. Draft copies of the design were provided to over 200 sites for review and feedback. Much of the feedback from participants was included in the final report from the contractors.

In the first phase of the design, GCI and its subcontractor, Structured, collected data using survey tools developed to discover network gaps in service across the state. The survey also identified 'best practices' related to network configuration and security for use in the design. Engineers and office managers from the participant organizations responded to the survey and identified future needs through the survey tools.

During this quarter, work on the Network Design with GCI and Structured included: drafting the final network drawings and recommendations, providing draft copies to project participants and collecting comments and suggestions for design improvements. After several reiterations and many meetings with the participants a final set of recommendations was presented to the Board of Directors of the Alaska eHealth Network. The final report was released on September and is included as Attachment A of this report.

As part of the design, the Alaska eHealth Network was provided with network diagrams, network standards, security standards, gap analysis, and recommendations for sustainability by the contractors. The final deliverables included data necessary to complete the next RFP for network implementation and a plan for sustainability of the network.

Due to delays in contracting and the 466 review process, the timeline was adjusted to begin on April 1, 2009. Following is a revised timeline based on the current project status.



Scope of Work

The scope of work for the Design Phase includes six major tasks. The tasks are identified in the table below.

#	Task	Deliverable	Due Date
1	Determine functional requirements and existing healthcare network components	Written draft of functional requirements, "as is" network status based on analysis of existing networks and data collected from project participants, and identification of USAC qualified and non-qualified participants. Qualified vendors may hold	45 days after receipt of signed contract COMPLETED

#	Task	Deliverable	Due Date
		web-based meetings and teleconferences as this contract does not include travel per FCC Order 07-198.	
2	Review of functional requirements and existing healthcare network components	Written report of the functional requirements and "as is" network status. Qualified vendors will solicit comments from all participants on the completeness of the report, revise as necessary and submit final document.	15 days after Task 1 due date COMPLETED
3	Draft recommendations for AeHN core network components	Written draft technical specifications and schematics describing the necessary network components to join selected partner networks with clearly defined central services, points of demarcation, privacy and security assurances, specific recommendations for the functional requirements, and recommendations for connecting and calculating usage for non-covered USAC entities.	30 days after Task 2 due date COMPLETED
4	Vendor evaluation criteria	Written draft of vendor evaluation criteria for Phase II (should include at a minimum; best fit, risk, cost, knowledge of the industry and knowledge of Alaska).	Due with deliverable from Task 3 COMPLETED
5	Solicit participant feedback	Written final technical specifications and schematics and vendor evaluation criteria.	30 days after Task 3 due date IN PROCESS
6	Presentation to AeHN advisory board on all findings	Meet with AeHN stakeholders to provide a verbal presentation and a written summary of all findings based on consultant review and local review.	30 days after Task 3 due date COMPLETED

Survey Tools

Survey tools utilized in the data collection phase include:

1. A network connectivity survey to collect current network topology and types of connectivity.
2. Participants were also asked to provide current network diagrams.
3. A network questionnaire to help assess the current needs and future anticipated requirements of the health organizations that are participating in the FCC Rural Health Care Pilot in regards to telemedicine, health information exchange and other network usage. This information will be compiled and used to determine the best approach to create an efficient health information network. Not all of the questions asked pertain to all organizations.
4. An optional bandwidth test was also completed by some of the participants. Results of this will be made available separately from the Design deliverables.

Summary for July 31, 2009 to October 30, 2009:

In conclusion, although the project is moving slower than expected there is much forward momentum at the state level to promote and implement health information exchange and the

advancement of telehealth. Project participants have been involved with the Design Phase and are anticipating the next steps of the Implementation Phase. As of the writing of this report, the invoice for the Design Phase has been filed with USAC and an Invoice Letter indicating approval for payment has been received.

The Alaska project is now on an accelerated path toward completion, AeHN and the Alaska Native Tribal Health Consortium expect to continue working closely with USAC and the FCC to ensure this project provides the most cost effective broadband solution for Alaska's health care providers.

By the next quarter, the participants anticipate the filing of the 466 for the next phase - Implementation. The RFP developed for the next phase will utilize the specifications from the document prepared during the Design Phase. The final design recommendations can be found in Appendix A.

Brief Description of the Challenges

Obstacles to achieving these goals are: physical geography; weather; satellite coverage; rural circuit costs; dispersed populations; aggregation demand difficulties; and long-term financial sustainability. The broadband bottleneck in Alaska is due to the lack of available and affordable bandwidth on existing satellites, which are often the only means of serving rural communities. Rural circuit costs are ten or more times greater than circuit costs in the Lower-48 (e.g., a T1 line costs $3-5,000 per month) and are therefore unaffordable without subsidies.

Alaska is the westernmost extension of the North American Continent. It contains almost a square mile for every inhabitant (656,425 square miles; 675,000 people). Alaska's geography is usually categorized into four main areas including two major mountain ranges, a central plateau, and the Arctic slope or coastal plain. Alaska's east-west span covers a distance of 2,000 miles, and from north to south 1,100 miles. The State's coastline, where many villages are located, is 33,000 miles in length, 50% greater than that of the conterminous United States. There are hundreds of islands, many of which are populated, found along the northern coast of the Gulf of Alaska, the Alaska Peninsula, and the Bering Sea Coast. Permafrost is a major factor in the geography of Alaska since it still covers most of the northern third of the State, despite global warming. The highest temperature recorded in Alaska is 100° Fahrenheit, the lowest temperature, -80°, without taking wind chill into account.

Together, the top ten cities and urbanized areas within Alaska contain about 606,000 people, or 89% of the state's population. The rest of the state, which is highly rural, is widely dispersed, with an overall average of 1.1 persons per square mile, compared to the national average of about 80 persons per square mile. 297 Alaskan communities have less than 1,000 people; 244 communities have less than 500 people; 105 have less than 100; 58 less than 50; 32 less than 30; 19 less than 20; and 8 less than 10. It is this11% of the population – around 70,000 people –to whom broadband connectivity would make the greatest difference. Given the lack of a viable broadband business case in these communities, the Alaska telecommunication industry is increasingly dependent on Universal Service Fund (USF) support, with an annual inflow of funding approaching $200, million, and yet the great majority of homes in these smaller communities are still without broadband.

Approach to Meeting these Challenges

As a state, Alaska will actively monitor and participate in Universal Service Fund reforms in order to maintain long-term sustainability. It will also work closely with industry to deploy innovative technology breakthroughs such as Intel's rural connectivity platform. AeHN has already sought state support for and involvement in the project by requesting matching funds totaling $6.5 million from the Department of Health and Social Services to support network development costs not covered by the FCC award.

Partners of AeHN and private foundations within Alaska have also agreed to provide matching funds. A Business Plan which includes a subscription fee system has been developed to ensure long term sustainability.

AeHN is planned in two phases: *Phase I* will focus on the assessment of current network capabilities, the development of functional specifications and a comprehensive healthcare network design for Alaska; *Phase II* will consist of the installation and deployment of the newly designed telecommunications network, linking existing networks, as well as creating new connections to rural locations where no connectivity currently exists.

1. Project Contact and Coordination Information

a. Identify the project leader(s) and respective business affiliations:

Project Coordinator: Rebecca Madison, Director, Alaska eHealth Network, rebeccam@akrivertracks.com

Lead Organization: Alaska Native Tribal Health Consortium, 4000 Ambassador Drive, Anchorage, AK 99508

Primary partners include the Alaska Federal Health Care Partnership (Indian Health Service, Veterans Affairs, Department of Defense – Air Force and Army, and Coast Guard), the Alaska Primary Care Association, the Alaska Native Tribal Health Consortium, the Alaska State Hospital and Nursing Homes Association, the Alaska Mental Health Trust Authority, the University of Alaska, AARP Alaska, and the State Department of Health and Social Services.

b. Provide a complete address for postal delivery and the telephone, fax, and e-mail address for the responsible administrative official:

4000 Ambassador Drive, Suite 500
Anchorage, AK 99508
Ph: (907) 729-3934
No Fax
rebeccam@akrivertracks.com

c. Identify the organization that is legally and financially responsible for the conduct of activities supported by the award:

Alaska Native Tribal Health Consortium, 4000 Ambassador Drive, Anchorage, AK 99508

d. Explain how project is being coordinated throughout the state or region:

The project oversight rests with the Alaska eHealth Network Board of Directors. This board is made up of representatives from the project participants (see Attachment 1 for a list of participants) and other healthcare leaders from around Alaska. The Board has ultimate responsibility for setting direction, identifying matching funding sources, and developing the long term strategy for sustainability.

Current AeHN Board members are:

Al Parrish, CEO, *Providence Health Center-Alaska*
Alex Spector, Director, *VA* and Chair, *Alaska Federal Health Care Partnership*
Garth Hamblin, CFO, Bartlett Regional Hospital
Jerome List, MD, *Alaska Ear, Nose and Throat*
Jeff Davis, President, *Premera Blue Cross/Blue Shield Alaska*
Karen Perdue, VP Health Programs, *University of Alaska*
William Hogan, Commissioner, *State of Alaska, Department of Health and Social Services*
Marilyn Walsh-Kasmar, Executive Director, *Alaska Primary Care Association*
Pat Luby, Advocacy Director, *AARP Alaska*
Paul Sherry, CEO, *Alaska Native Tribal Health Consortium*
Rod Betit, President, *Alaska State Hospital and Nursing Home Association*
Tom Nighswander, MD, Family Practice, *Board Facilitator*

Ad hoc:
Rebecca Madison, Director, *Alaska eHealth Network*
Linda Boochever, Executive Director, *Alaska EHR Alliance*

There is also an IT Workgroup made up of physicians and IT professionals from the participating organizations. Members of the IT Workgroup provide technical expertise, participate on vendor selection committees and provide advice on strategic direction for the network and network applications.

The Board and the IT Workgroup meet monthly to review progress and provide direction for the Alaska eHealth Network. There is also a website for members of the public to follow the progress and provide comments back to the leadership (http://ak-ehealth.com/).

2. Identify all health care facilities included in the network.

a. Provide address (including county), zip code, Rural Urban Commuting Area (RUCA) code (including primary and secondary), six-digit census tract, and phone number for each health care facility participating in the network:

See Appendix B

b. For each participating institution, indicate whether it is:
i. Public or non-public;
ii. Not-for-profit or for-profit;
iii. An eligible health care provider or ineligible health-care provider with an explanation of why the health care facility is eligible under section 254 of the 1996 Act and the Commission's rules or a description of the type of ineligible health care provider entity.

See Appendix B

3. Network Narrative: In the first quarterly report following the completion of the competitive bidding process and the selection of vendors, the selected participant must submit an updated technical description of the communications network that it intends to implement, which takes into account the results its network design studies and negotiations with its vendors. This technical description should provide, where applicable:

a. Brief description of the backbone network of the dedicated health care network, e.g., MPLS network, carrier-provided VPN, a SONET ring;

See Design Recommendations – Appendix A.

b. Explanation of how health care provider sites will connect to (or access) the network, including the access technologies/services and transmission speeds;

See Design Recommendations – Appendix A.

c. Explanation of how and where the network will connect to a national backbone such as NLR or Internet2;

See Design Recommendations – Appendix A.

d. Number of miles of fiber construction, and whether the fiber is buried or aerial;

See Design Recommendations – Appendix A.

e. Special systems or services for network management or maintenance (if applicable) and where such systems reside or are based.

See Design Recommendations – Appendix A.

4. List of Connected Health Care Providers: Provide information below for all eligible and non-eligible health care provider sites that, as of the close of the most recent reporting period, are connected to the network and operational.

a. Health care provider site;
No sites connected at this time.

b. Eligible provider (Yes/No);
No sites connected at this time.

c. Type of network connection (e.g., fiber, copper, wireless);
No sites connected at this time.

d. How connection is provided (e.g., carrier-provided service; self-constructed; leased facility);
No sites connected at this time.

e. Service and/or speed of connection (e.g., DS1, DS3, DSL, OC3, Metro Ethernet (10 Mbps);
No sites connected at this time.

f. Gateway to NLR, Internet2, or the Public Internet (Yes/No);
No sites connected at this time.

g. Site Equipment (e.g., router, switch, SONET ADM, WDM), including manufacturer name and model number.
No sites connected at this time.

h. Provide a logical diagram or map of the network.
No sites connected at this time.

5. Identify the following non-recurring and recurring costs, where applicable shown both as budgeted and actually incurred for the applicable quarter and funding year to-date.

a. Network Design
No recurring or non-recurring costs incurred at this time.

b. Network Equipment, including engineering and installation
No recurring or non-recurring costs incurred at this time.

c. Infrastructure Deployment/Outside Plant
i. Engineering
ii. Construction
No recurring or non-recurring costs incurred at this time.

d. Internet2, NLR, or Public Internet Connection
No recurring or non-recurring costs incurred at this time.

e. Leased Facilities or Tariffed Services
No recurring or non-recurring costs incurred at this time.

f. Network Management, Maintenance, and Operation Costs (not captured elsewhere)
No recurring or non-recurring costs incurred at this time.

g. Other Non-Recurring and Recurring Costs

No recurring or non-recurring costs incurred at this time.

6. Describe how costs have been apportioned and the sources of the funds to pay them:

a. Explain how costs are identified, allocated among, and apportioned to both eligible and ineligible network participants.

No recurring or non-recurring costs incurred at this time.

b. Describe the source of funds from:
i. Eligible Pilot Program network participants
ii. Ineligible Pilot Program network participants

No recurring or non-recurring costs incurred at this time.

c. Show contributions from all other sources (e.g., local, state, and federal sources, and other grants).
i. Identify source of financial support and anticipated revenues that is paying for costs not covered by the fund and by Pilot Program participants.
ii. Identify the respective amounts and remaining time for such assistance.

No recurring or non-recurring costs incurred at this time.

d. Explain how the selected participant's minimum 15 percent contribution is helping to achieve both the selected participant's identified goals and objectives and the overarching goals of the Pilot Program.

No recurring or non-recurring costs incurred at this time.

7. Identify any technical or non-technical requirements or procedures necessary for ineligible entities to connect to the participant's network.

The partners have not identified ineligible entities at this time. However, the Alaska eHealth Network will be developing a plan for how to proceed with connecting ineligible entities during the Design Phase

8. Provide an update on the project management plan, detailing:

a. The project's current leadership and management structure and any changes to the management structure since the last data report;

There have been no changes in the leadership and management structure since the inception of the project. Alaska Native Tribal Health Consortium has been designated by the partners to act as interim project manager and home for Alaska eHealth Network until a 501(c)(3) can be established. The partners envision the eventual creation of a public-private partnership to manage the Alaska eHealth Network for the long-term.

b. In the first quarterly report, the selected applicant should provide a detailed project plan and schedule. The schedule must provide a list of key project deliverables or tasks, and their anticipated completion dates. Among the deliverables, participants must indicate the dates when each health care provider site is expected to be connected to the network and operational. Subsequent quarterly reports should identify which project deliverables, scheduled for the previous quarter, were met, and

which were not met. In the event a project deliverable is not achieved, or the work and deliverables deviate from the work plan, the selected participant must provide an explanation.

The Alaska project plan was developed through a partnership of health care providers, federal and state health agencies, insurers, and consumer groups. The award to Alaska Native Tribal Health Consortium will finance the design and development of a statewide broadband network (the Alaska eHealth Network, or AeHN). Comprised primarily of rural health care practitioners, AeHN will unify and increase the capacity of disparate healthcare networks throughout Alaska in order to connect with urban health centers and access services in the lower 48 states.

AeHN infrastructure development requirements are to:

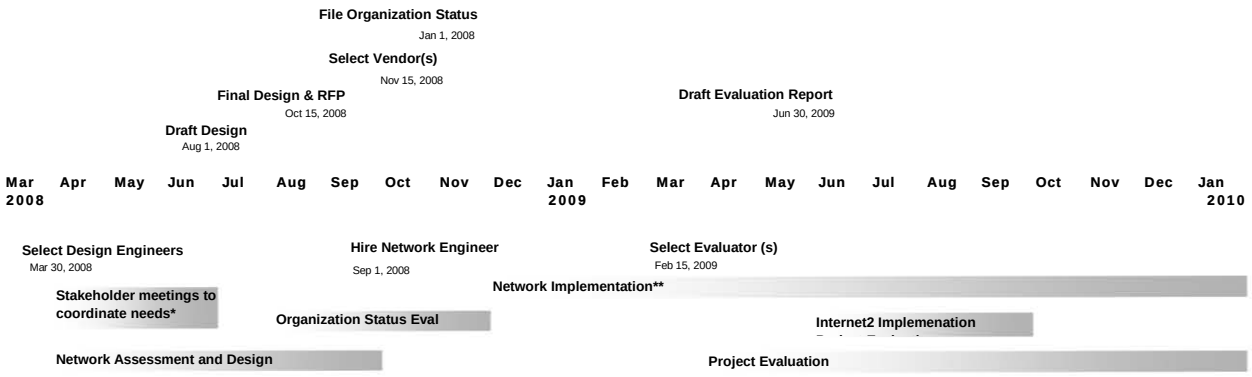
- Unify separate healthcare networks throughout Alaska and supply rural health providers with connectivity to urban health centers for the purposes of telehealth and information exchange.
- Provide capability for managed video and access to health networks and services in the lower 48 states through the use of Internet2 (I2) or similar services.
- Test innovative methods of funding, investigate ways to increase network efficiencies, and develop a strategy for uninterrupted rural connectivity, including a sustainable economic model.

AeHN will facilitate the exchange of critical health information between health providers and support telemedicine services, including the transfer of high resolution images for patient care; videoconferencing; and Voice-over-Internet applications. Additional objectives include universal access to secure, reliable, and ubiquitous connections with level cost structures to all endpoints under “net neutrality” principles (i.e., a broadband network free of restrictions on the kinds of equipment that may be attached or the modes of communication allowed, and where communication is not unreasonably degraded by other communication streams).

AeHN is planned in two phases: Phase I will focus on the assessment of current network capabilities, the development of functional specifications and a comprehensive healthcare network design for Alaska; Phase II will consist of the installation and deployment of the newly designed telecommunications network, linking existing networks, as well as creating new connections to rural locations where no connectivity currently exists.

Phase I: Design

The detailed project plan and schedule will be developed during the Design Phase. Following is a broad timetable for the project:



Notes:

*Denotes individual participant stakeholder meetings. Monthly meetings of the Advisory Board and the IT Workgroup will continue throughout the project.

**Network Assessment and Design will determine the Network Implementation phasing for specific network applications.

This timetable was developed based on a start date of March 2008. The timeline and planning document will be adjusted using the same items and length of time for implementation based on the RFP posting date and any discoveries made during the design phase. The RFP and 465 with 465 Attachment were submitted to USAC for review in April.

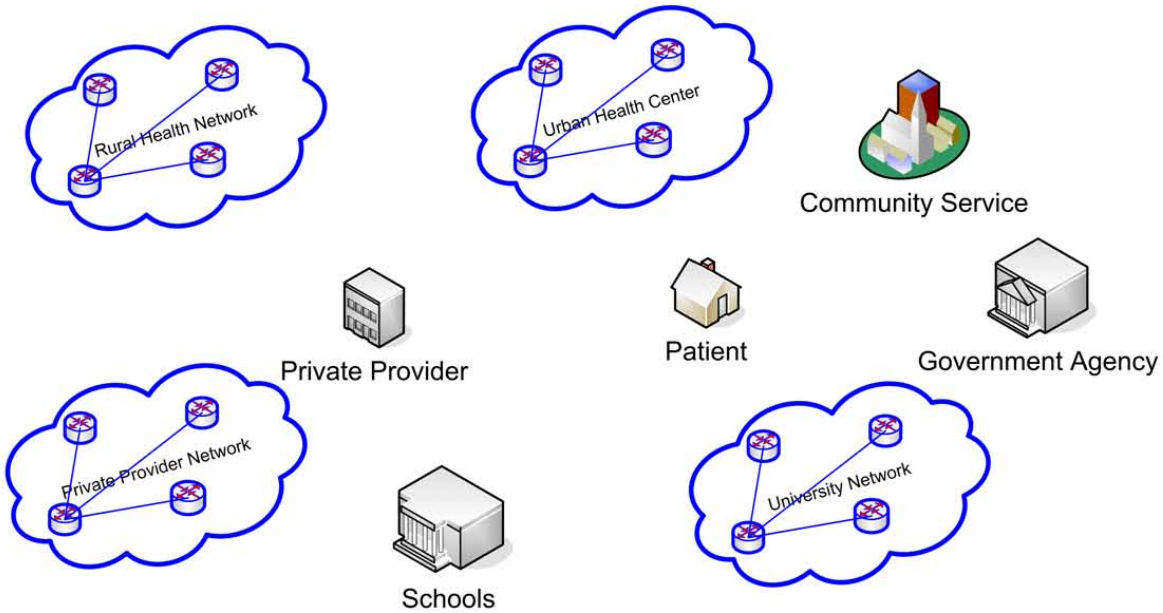
Phase II: Implementation

A complete report on the implementation will be prepared and submitted following the design phase. A summary of the proposed network follows.

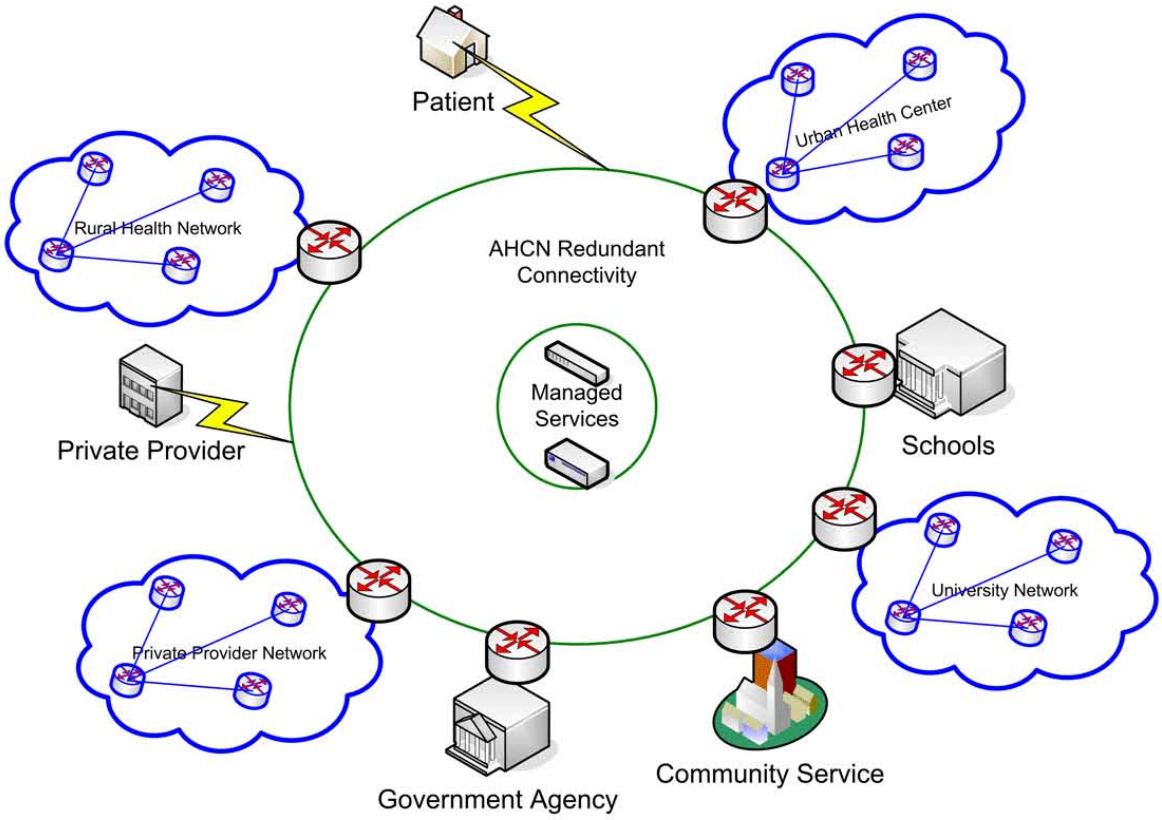
Once the infrastructure design has been completed, Alaska Native Tribal Health Consortium will solicit bids, select vendors using an open selection process, and coordinate installation of the necessary telecommunication infrastructure to create the AeHN. Based upon the network design engineers' recommendations, AeHN will implement the requisite telecommunication links (i.e. TLS, T3 or other line configurations), routers, and bridges to maximize network capacity.

The following diagram depicts the contrast between the current health network status in Alaska and the proposed pilot project under the FCC Rural Health Care Pilot.

Alaska Current Health Network Status



Alaska Health Care Network (Proposed)



The network will utilize an Internet2 (I2) connector location to access the PNWGP. Through the access point, AeHN will be linked to an I2 network, such as Abilene. I2 service will provide the AeHN with advanced network applications, including security and tunneling protocols and high-definition video streams. Linking to an I2 network will also facilitate the communication and exchange of educational tools between University of Alaska, Georgetown University, University of Washington, and rural healthcare providers in Alaska. It is intended that I2 will keep Alaskan providers in touch with cutting edge healthcare issues by opening access to the hundreds of universities currently on-line. The connection to an I2 network will also improve Alaska's coordination in the WWAMI program, which provides assistance to medical students in the rural communities of Washington, Wyoming, Alaska, Montana, and Idaho.

The HIE will be developed using standards based data sets, messaging services and interfaces to allow bi-directional flow of information between members of the AeHN. This will allow for the transmission of relevant patient information, such as an Electronic Health Records (EHRs), digital radiology images, or consultative reports, between providers in real time. This functionality is particularly important in Alaska where the harsh topography alone causes physicians to rely heavily on telecommunications. The network will use anonymous resolution (a-MPI) to preserve the privacy and security of the data through de-identified transfer of information. The network will also implement a record locator service (RLS) to allow each provider to select the information that can be shared, maintaining patient privacy as needed.

Following is a draft work plan that will be further developed once the design phase is completed.

ALASKA HEALTH CARE NETWORK (AHCN) WORKPLAN			
Goal:	Connect rural providers, patients, payers, and state agencies across Alaska, including both public and private organizations.		
Objective:	**Key action steps:**	**Responsible entity:**	**Months:**
Unify disparate healthcare networks throughout Alaska and supply rural health providers with connectivity to urban health centers for the purposes of telehealth and health information exchange.	Hire a minimum of three expert network consultants to evaluate and determine the best-practice approach to the AHCN design.	Alaska ChartLink	1
	Establish a series of meetings to discuss and coordinate needs/options.	Alaska ChartLink, participating networks, network consultants	1-2
	Prepare a functional network design and compose an RFP.	Alaska ChartLink, network consultants	2-6
	Implement network components.	Alaska ChartLink, network consultants, participating networks/providers	6-24
	Establish/improve HIE and telemedicine capabilities.	Alaska ChartLink, participating providers	6-24

Provide Internet2 (I2) services across the AHCN to improve network capacities and gain access to health services in the lower 48 states.	Coordinate with UA in Fairbanks to establish connectivity to an I2 network.	Alaska ChartLink, network consultants, UA	12-24
Work with the FCC to identify and test innovative methods of funding, investigate ways to increase network efficiencies, and develop a strategy for uninterrupted rural connectivity.	Meet with FCC to determine priority research areas and discuss possible solutions to system inefficiencies.	Alaska ChartLink, network consultants, FCC	1-24

9. Provide detail on whether network is or will become self sustaining. Selected participants should provide an explanation of how network is self sustaining.

The primary challenges for most healthcare networks across the country are developing and implementing strategies to achieve financial sustainability. Many networks have successfully obtained initial grant funding to initiate their projects, but grant funding is not a long-term solution for network financial sustainability. Recurring revenue streams must be developed to operate and expand network services, and generating a reliable revenue stream is dependent on demonstrating value and benefit to stakeholders and users.

While the incidence of documented return on investment (ROI) generated by a statewide healthcare network is still limited, a large body of research indicates that health information technology (HIT) can dramatically reduce healthcare costs. All stakeholders will collaborate to define and assess the potential value created by a statewide healthcare network. That value assessment will guide development of an appropriate fee-based model to generate sustainable revenue for this network project.

The eHealth Initiative's *Connecting Communities Toolkit* defines the following Common Principles regarding finance, incentives, and values obtained from health information exchange (HIE):

1. The HIE functions will be the decision of each individual community-based entity following a thorough evaluation of community-based needs and opportunities for health and healthcare efficiency improvement on a local level. The expectation when choosing these functions is that the entire community will eventually participate.
2. HIEs will need to rely upon a sustainable business model for survival. The sustainable business model will be built upon a combination of prudent resource management and revenues contributed by the stakeholders who benefit from the health benefits and efficiency improvements of the HIE.
3. Incentives—either direct or indirect—are defined as upfront funding or changes in reimbursement to encourage, acquire and use HIT. In order to be effective, incentives—either indirect or direct—should:

    - Engage key stakeholders in the development—payers, purchasers and clinicians.

- Focus on quality and performance, improved patient health outcomes, the health information technology (HIT) infrastructure required to support improvements and efficiencies, and the sustainability of HIE within communities.
- Reward the use of clinical applications that are interoperable, using agreed-upon data standards and, over time, require that the interoperability of such applications be leveraged.
- Avoid reductions in reimbursement that would have the effect of discouraging providers from acquiring and using HIT.
- Address not only the implementation and usage (not purchase) of HIT applications but also the transmission of data to the point of care.
- Encourage coordination and collaboration within the region or community.
- Seek to align both the costs and benefits of HIE/HIT and be of meaningful amounts to make a positive business case for providers to invest the resources required to acquire and use HIT for ongoing quality improvement.
- Transition from a focus on reporting of measures that rely on manual chart abstraction and claims data to measures that rely on clinical data sources and connectivity of standards-based, interoperable HIT applications at the point of care.

These principles support the developing framework for the AeHN sustainable business model.

Alternative Sources of Funds

The source of sustainable funding for AeHN will come from two main categories:

1. Partner Funding: Partner funding generally represents contributions to a network from governmental or philanthropic organizations. These contributions can either be monetary or in-kind contributions. Both federal and state organizations have actively provided grants to HIT networks, EHR and RHIO initiatives across the country. Philanthropic organizations like the Robert Wood Johnson Foundation and the Rasmuson Foundation have also provided significant funding for healthcare network initiatives and other healthcare programs. Partner funding has been key to startup operations for many healthcare network initiatives across the country. One drawback of partner funding is the limited resources, making it generally not suitable to sustain operations. Ongoing revenue streams have also been identified.

   Partner funding will be essential during the startup of AeHN to finance upfront capital and development costs. Early marketing efforts will focus exclusively on securing major governmental and philanthropic sources of funds for both initial and ongoing requirements.

2. Subscription Fees: Subscription fees are a very straightforward approach to generating revenue and they represent a manageable and preferred alternative. Subscriptions do not discourage usage since fees charged are independent of utilization. Subscription fees are challenging because they require a strong understanding of startup and operating costs. Developing a fair distribution of fees across various users must be aligned with the benefits those users will receive in order to cover network costs. Subscription fees can be applied to both payers and providers.

- Purchasers of healthcare services (payers) will ideally recognize participation in the AeHN as an excellent opportunity to improve the wellness of their constituents and to reduce healthcare costs. For the network, payers represent a significant revenue opportunity—a reasonable number of strategic contacts and relationships promise to generate large revenue streams representing approximately 85% of the insured population. Soliciting subscription fees in this aggregate fashion will:
    - Avoid overhead for billing/collecting small individual fees across a large consumer population,
    - Allow payers and healthcare providers to market network access as another service offered to their clients, and
    - Generate a predictable income source for the network.

- Providers will both contribute and utilize the data exchanged through the AeHN. As information exchanged increases, a greater positive impact to healthcare is achieved. Accordingly, the network should strongly encourage data contribution and usage by not overly burdening providers to cover operational costs. Providers will benefit from using the network, and subscription fees will align with benefits received. Payers and providers will be asked to contribute annual lump sums (perhaps payable monthly) based on the number of constituents they represent. A tiered revenue model will be developed for healthcare provider subscription fees categorized as:
    - Hospitals and clinics
        - Large facilities and health system
        - Medium facilities
        - Small facilities
    - Clinicians and clinician groups
    - Individuals/Payers/Employers

  Such a revenue model will establish inflow expectations and distribute expected revenues proportionately across providers of various sizes.

Participation from physicians across the state will be key to the network's success. Physicians are crucial because they control a wealth of healthcare information for Alaska residents. Decreased costs and improved quality of care will be achieved as more clinicians access the network routinely during care delivery.

Connectivity to the network by other clinicians will also be critical. A comprehensive marketing, communication and training program is being developed to secure the participation of these providers. An Internet-based component will help reach remote clinicians throughout the state. Personal visits may be made to local and regional meetings of these individuals where many contacts can keep the cost per contact manageable. Benefits that will positively impact clinicians financially should be identified, quantified and emphasized to the clinician population.

Funding sources for costs not covered:

Required costs that are not covered include: salary of program manager, statewide coordination meetings, legal and participation agreements, drafting RFP and evaluating responses, and Help desk/network liaison.

Initially, the partners will be assessed a fee for the coordination and maintenance of the network. As the network grows, this fee arrangement will be re-assessed and adjusted. It is anticipated that the cost savings to the individual partners and the improved communication capacity will far outweigh the minimum fee assessment. Most partners have agreed to participate in a "fee-for-service" model. Business agreements will be put in place as each partner is connected to the network.

Draft sample of fee structure:

Large facilities/hospitals ($25,000 annual)

Mid-size facilities/hospitals ($5,000 annual)

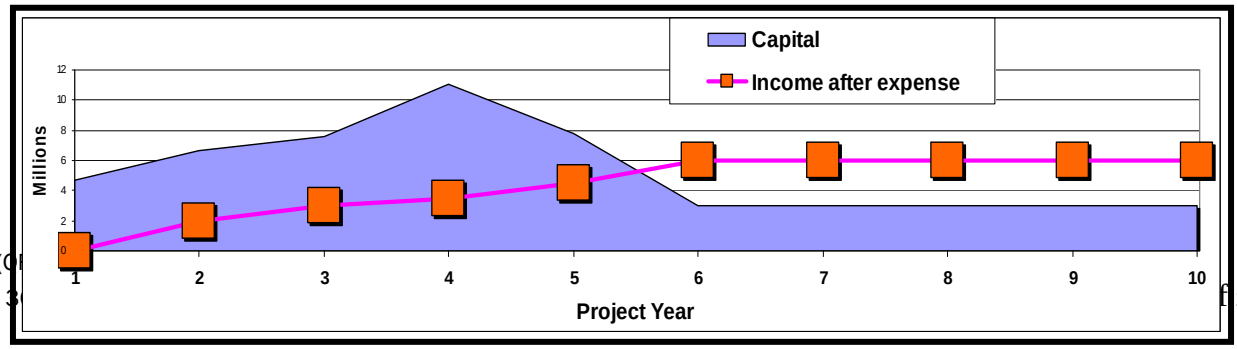
Small facilities/hospitals ($500 annual)

Single providers ($50 per provider annual)

Projected Capital

In order for AeHN to achieve its goal of rural access to healthcare through telecommunications, the project must begin with infrastructure development. The infrastructure phase, which encompasses this proposal, is expected to span two years and will require substantial funding. However, future funding for infrastructure will not be required once installation has been completed. In parallel, individual organizations will begin planning and implementing telehealth and health information exchange capabilities to prepare for comprehensive connectivity. AeHN anticipates telehealth and health information exchange implementation investments to peak during the first six years, with varying degrees of capability between individual facilities. The projected expenditures for telehealth and health information exchange efforts are depicted below. The FCC Rural Health Care Pilot Project provides funding for initial capital investments. Additional capital requirements will be addressed with state and private funding streams.

CAPITAL REQUIREMENTS	Pilot (Year 1)	Full Project (Year 2-6)
Clinician Office EHR Adoption	1,000,000	18,000,000
• Vendor selection		
• Pilot clinic selection		
• Project management & evaluation		
• Model implementation guidelines		
• Funding support for EHR purchase		
Health Information Exchange (AeHN)	3,900,000	15,000,000
• Infrastructure (Hardware/Software/Telecom)		
• Personal Health Record for all Alaskans		
• Security and Privacy		
TOTALS	$4,900,00	$33,000,000



10. Provide detail on how the supported network has advanced telemedicine benefits:

Although the AeHN project has not begun, it is anticipated that the expansion of a health care network to connect urban and rural areas of Alaska will provide significant benefits in a number of areas. The following questions have been answered based on those anticipated benefits. This section will be revised once the network is implemented.

a. Explain how the supported network has achieved the goals and objectives outlined in selected participant's Pilot Program application;

While the FCC Rural Health Care Pilot Program does not provide funding for health technology applications, the implementation of the proposed coordinated network will facilitate the use of HIE, telemedicine applications (both videoconferencing and store and forward), and Voice over IP (VoIP). Since many of these applications are being developed or implemented on disparate networks throughout the state, the unification of networks will allow for these existing applications to be shared with all connected AeHN members.

The development of a statewide healthcare network will allow for any organization to have one connection point for all available services. Connecting to a managed system reduces the barrier to entry and provides higher quality, greater throughput, greater reliability and lower support costs for the participating organizations. This coordinated approach allows the organizations to focus on the business of health care and worry less about the technology.

Another functionality of the AeHN will be the Personal Health Record (PHR). The PHR enables patients to manage their own healthcare and closely monitor their personal health information. Patients will be able to communicate with clinicians through a portal, as well as send emails. Patients will also be able to save their PHR to disk and transport their relevant patient information to any doctor. In addition to accessing their health information, patients will also be able to utilize network resources such as condition specific support networks, disease specific knowledge bases, and other e-clinical services such as online scheduling, clinician messaging and access to educational materials. These new advances will allow Alaskans to improve their own healthcare by making them an active participant in the collection and maintenance of relevant information. The PHR will provide a mechanism for patients to set access permissions and review audit reports of their health information.

The process of network implementation will be documented for reporting to the Rural Health Funding Program. These reports will provide valuable insight to the uses of FCC funding for future and ongoing investments. AeHN will work with the FCC to collect data and identify ways that Rural Health Care Funding can assist in providing an uninterrupted, efficient high speed network that is applicable to small rural communities nationwide. Connecting physicians through a network spanning across Alaska will provide a valuable model for dissemination throughout the nation, especially to rural areas. The AeHN will demonstrate that the appropriate distribution of bandwidth in rural areas can be more effective than increasing bandwidth to urban settings. Additionally, the collaboration of public and private

organizations involved in this project can help the FCC to resolve issues regarding fees for network usage.

b. Explain how the supported network has brought the benefits of innovative telehealth and, in particular, telemedicine services to those areas of the country where the need for those benefits is most acute;

Telemedicine applications play a vital role in the communication between providers, patients, and other healthcare delivery organizations. While telemedicine applications are currently in practice at many of the locations, this project will increase both the number of users and the number of functionalities particularly for the Alaska's rural citizens.

c. Explain how the supported network has allowed patients access to critically needed medical specialists in a variety of practices without leaving their homes or communities;

Telemedicine will be used for a variety of specialty services, including pharmacy, orthopedics, pathology, and ear, nose, and throat (ENT) practices. Communication via telemedicine may be in the form of store-and-forward methods or real-time transmission of digital images. Another application of telemedicine in this project will support Telepsychiatry, in which the use of video conferencing will enable patients to visit doctors at another location. Video communication will also be used in doctor/clinic-to-hospital conferencing, delivering care to special needs children in school, monitoring of ICU patients, and administering complex, real-time catheterization studies. Telemedicine will support various home health applications as well, allowing private nurses and aides to communicate with the doctors regarding their patient's health.

This project will assist public, private, for-profit and not-for-profit institutions with advanced telecommunication capabilities in rural Alaska. AeHN will become a model for widespread dissemination of HIE and telemedicine for both rural and urban communities across the country, demonstrating the effectiveness of connected healthcare delivery. As such, AeHN will be available as a test bed for FCC funding strategies.

d. Explain how the supported network has allowed health care providers access to government research institutions, and/or academic, public, and private health care institutions that are repositories of medical expertise and information;

The creation of the AeHN will greatly improve the capabilities of patients, providers, and payers to access important healthcare information. School nurses will be able to access student records, such as dental histories and immunizations, to help parents better manage their children's needs. The University of Alaska will be better able to offer degree and certificate programs to more students at distant locations. Clinics and universities will have open communication, including multicast seminars in medicine and healthcare research access that could strengthen the knowledge base of Alaskan providers. The AeHN will provide accessible data for important public health monitoring, such as disease registries, immunizations, bio-terrorism tracking, and disaster preparedness. In addition, the network will offer a connection to Emergency Medical Services throughout the state, as well as maintain a global catalog of emergency services and providers. Alaskan providers will be directly connected to payers, including Medicaid, for eligibility, submission, and reporting services.
Linking to an I2 network will also facilitate the communication and exchange of educational tools between University of Alaska, Georgetown University, University of Washington, and rural healthcare providers in Alaska. It is intended that I2 will keep Alaskan providers in

touch with cutting edge healthcare issues by opening access to the hundreds of universities currently on-line. The connection to an I2 network will also improve Alaska's coordination in the WWAMI program, which provides assistance to medical students in the rural communities of Washington, Wyoming, Alaska, Montana, and Idaho.

e. Explain how the supported network has allowed health care professional to monitor critically ill patients at multiple locations around the clock, provide access to advanced applications in continuing education and research, and/or enhanced the health care community's ability to provide a rapid and coordinated response in the event of a national crisis.

The infrastructure required for uninterrupted connectivity during emergencies, such as a natural disaster or a bioterrorism threat, is lacking in Alaska. The ability to connect Alaska to the lower 48 will provide for rapid, coordinated response in the event of a national crisis.

11. Provide detail on how the supported network has complied with HHS health IT initiatives:

a. Explain how the supported network has used health IT systems and products that meet interoperability standards recognized by the HHS Secretary;

It is expected that all health technology systems developed as part of this project will meet the interoperability standards being developed by the federal government. All RFPs will require vendors to meet existing standards.

b. Explain how the supported network has used health IT products certified by the Certification Commission for Healthcare Information Technology;

Any HIT products utilized by the network will be certified by the CHHIT.

c. Explain how the supported network has supported the Nationwide Health Information Network (NHIN) architecture by coordinating activities with organizations performing NHIN trial implementations;

Alaska participates in the ONC funded Health Information Security and Privacy Collaboration (HISPC). HISPC seeks to develop standard agreements for the exchange of health information that can be used nationally. This group of 41 states works closely with the NHIN organizations to ensure the development of pilot projects that will be compatible with the NHIN and identifies areas where crosswalk may avoid duplication of efforts.

d. Explain how the supported network has used resources available at HHS's Agency for Healthcare Research and Quality (AHRQ) National Resource Center for Health Information Technology;

The AHRQ website and associated resources have been invaluable in the development of the AeHN. Alaska Native Tribal Health Consortium also receives funding through the HISPC project which is addressing issues of privacy and security as related to the exchange of health information between organizations.

e. Explain how the selected participant has educated themselves concerning the Pandemic and All Hazards Preparedness Act and coordinated with the HHS Assistant Secretary for Public Response as a resource for telehealth inventory and for the implementation of other preparedness and response initiatives;

AeHN is familiar with PAHPA and anticipates participating in PAHPA activities once the network is completed.

f. Explain how the supported network has used resources available through HHS's Centers for Disease Control and Prevention (CDC) Public Health Information Network (PHIN) to facilitate interoperability with public health and emergency organizations.

As part of the HISPC project, AeHN will be participating with NY, NJ, PR, and Guam in an HIE pilot to exchange immunization data across state borders. This project is coordinated with the CDC and public health agencies. As of this report, there is no effort underway to coordinate further with the PHIN. Under the current order, EMS agencies are specifically prohibited from receiving funds through this project.

12. Explain how the selected participants coordinated in the use of their health care networks with the Department of Health and Human Services (HHS) and, in particular, with its Centers for Disease Control and Prevention (CDC) in instances of national, regional, or local public health emergencies (e.g., pandemics, bioterrorism). In such instances, where feasible, explain how selected participants provided access to their supported networks to HHS, including CDC, and other public health officials.

The State of Alaska, Department of Health and Social Services is a partner in the AeHN project. Although there is no coordination with HHS or CDC for public health emergencies at this time, this coordination is considered a highly desirable activity and may be included later in the implementation. State of Alaska partners have ready access to HHS and CDC, and will be prominent in planning for interactions with these organizations.

APPENDIX A

Network Design Specifications for the Alaska eHealth Network
As prepared for the Alaska Native Tribal Health Consortium
By GCI

Adobe Acrobat Document

AeHN Network Requirements

APPENDIX B

Alaska eHealth Network Participant List

Adobe Acrobat Document

Participant List