



Ragged Edge Community Network Society

Progress Report – September 30th, 2006

Community Champion:
Community Futures Development Corporation of Mount Waddington

Project Design, Management and Implementation:
Kevin R. Battersby
Sea Star Solutions Ltd.
Author



Background

The Ragged Edge Community Network and Society has come into being as a result of many years of advocacy and fund raising on the part of the Community Champion, Community Futures Development Corporation of Mount Waddington (CFDCMW). Beginning about 2001 the need for enhanced broadband Internet access was identified by Cathy Denham and Evelyn Clark as a necessary service to assist the residence and businesses of the communities served by Community Futures Development Corporation of Mount Waddington. In particular those communities that are unserved or under-served with the needed connectivity.

It has taken years and considerable effort to raise the funds needed to make the service a reality.

One of the early steps in making the vision real was finding and involving the outside expertise needed to move forward. CFDCMW was and is particularly well suited to acting as a Community Champion, with skills in project over-site, funding, grant applications and most importantly a keen interest in the communities they serve. Needed was the knowledge and skills necessary to build an Internet Service Provider, it's infrastructure and business model. Kevin Battersby of Sea Star Solutions Ltd. was identified as having the background and skills necessary to plan the business, design the network and implement these plans to make the vision a reality. At various times and in particular over the last 14 months Kevin Battersby and CFDCMW have worked collaboratively towards the goal of a viable broadband Internet service for communities in need.

Progress on the long term goals of the Community Champion has been made possible by the Province of British Columbia's Community Network Infrastructure Grant program and the Connecting Communities Agreement. The Connecting Communities Agreement is a collaborative effort between the Province of British Columbia and Telus Communications Inc. These two efforts provided the seed funding and back-haul infrastructure needed for the project to move forward.

Additional funding was sought and obtained from Western Economic Diversification and the Coast Sustainability Trust.

Community Network Infrastructure Grant

The competition for these grants was announced in late June 2005. Kevin Battersby (Sea Star Solutions Ltd.) was engaged at the end of July 2005 by CFDCMW to write and submit applications by the end of August 2005. This ambitious timetable required a quick consultation process with candidate communities. From an initial list of about 15 communities, 6 were selected for application. The communities selected were those that were eligible under the guidelines of the CNIG, could be reached (summer schedules made this impossible in some cases), that a solution could be provided for and most importantly that the community wanted to participate in the project.

Three of the six communities received grant funding under the CNIG program. This was the largest block of funding awarded throughout the province. In a subsequent round of direct awards two additional grants were given to facilitate moving ahead with projects in subsequent communities.

Although the initial CNIG grants formed only a small part of the needed funds to build

the last mile networks the grants were critical as seed monies to leverage other grant funding. To obtain the needed additional funds, applications we made to Western Economic Diversification and Coast Sustainability Trust. These applications were agreed to in principle by the end of October 2005 but not finalized until late January 2006.

First Communities

The initial list of communities to be the recipients of last mile broadband Internet networks were Holberg, Quatsino and Sointula. At this time both Holberg, Sointula and surrounding areas are being served. The equipment to provide service into the main part of Quatsino is awaiting installation.

Ragged Edge Community Network Society

The first step in creating an Internet service was the creation of a business unit. A non-profit society was chosen as the best model for a number of reasons. The primary one being the ability to work with communities openly with a clear focused goal. The non-profit society status also allows RECNS to participate in future public grant opportunities directly.

Although the society is non-profit, it is designed to be self supporting in its operation and to generate sufficient revenue to take care of its needs on a day-to-day basis.

The formation of the society was a further example of volunteer effort. Jeffery Jones & Co. provided the incorporation services pro-bono. The Society's incorporation was a clear sign that prior efforts were producing tangible results.

Meeting the Communities

Engaging and informing the communities at the beginning of the project provided further insight into their needs as well as identifying possible volunteers and supportive organizations. Town hall meetings were held in Quatsino, Holberg and Sointula in October and early November 2005. Subsequent meetings and ongoing dialogue have been conducted as needed throughout the project.

Broadband Internet service for some of the communities has been a goal and lack of it a source of frustration for a number of years. Convincing community members that this project was real and that it would produce results was one of the early challenges. Only through continued contact and demonstrated results were the sceptics slowly overcome.

Planning the Network

The terrain and forests in northern Vancouver Island provide a challenging environment in which to distribute Internet connectivity. Careful consideration was given to a variety of delivery models early in the building process. For reasons of expediency and cost, wireless technologies were chosen for the initial network implementation. Distribution by any other means would have involved limitations in service area and increased costs beyond available funds.

With the decision made to use wireless technology the next major decision was the type of equipment.

A major design consideration was simplicity. To keep the potential points of failure to a minimum, the individual network segments needed to be as uncomplicated as possible. This requirement for simplicity also dictated that complex back-end services be outsourced to remove the need for local information servers and their time consuming maintenance.

Due to the prevalence of trees in northern Vancouver Island, the wireless equipment selected would have to be capable of penetrating these to some degree. The only cost effective and proven equipment available operates in the 900 MHz frequency band. The trade off is somewhat slower speed than those available at higher frequencies. This equipment needed to be field tested and the limitations and advantages understood. After successful initial testing, a vendor, Waverider, was selected. Although this equipment currently forms the bulk of equipment installed in the network, it's selection has not precluded the use of other types of equipment as local or future needs require.

Field Testing



To test the effectiveness of equipment and site locations field tests were conducted at various places, throughout late October to mid-December 2005.

The first sites tested were in Sointula. The photos on the right and left show volunteers Eric Marshal and Andy Barlak can be seen standing next to the portable tower and access point.

The light portable tower and access point allowed for rapid testing of various site locations. Typically it took 30 minutes to assemble the tower upon arrival at a test location and be ready to begin testing.

Testing of a location involved taking a modem also called Customer Premise Equipment or CPE and moving throughout the expected coverage area. Once a location was evaluated and the expected coverage area mapped out it was either added to a list of possible locations or rejected.



One of the more interesting tests involved arranging temporary access to back-haul connectivity in Holberg, thanks to School District 85 and Network BC, and giving Internet demonstrations while driving about the town site.

Agreements

Once a list of suitable sites was compiled the work of contacting land owners or responsible organizations began. This was a time consuming process which was not finalized until late January for the initial sites in Holberg and Sointula. For repeater sites to cover extended areas of Malcolm Island, this was an ongoing activity until August 2006.

For Quatsino the use of Crown Land was required. This lengthy process and the satisfaction of various requirements for use of the land are ongoing as of this report.

They are expected to be finalized in the near future, at which time construction can begin on the main access point for Quatsino.

Installing Towers

With the sites selected and agreements in hand, construction could begin in earnest. Some unusual and unexpected challenges were encountered. One example was the availability of towers. Rebuilding after the hurricane damage on the south coast of the United States had depleted normal supplies and increased lead times to obtain towers.

Participation from the communities began to happen at this point. Western Forest Products obtained a cedar pole, used in lieu of a tower and volunteers helped install it in Holberg. In addition to the volunteers the professional services of K&K Electric were used to provide the lift equipment and the needed connections to the site.



For Sointula's main tower a local contractor was engaged, Karsten Construction, to oversee the installation along with the project manager Kevin Battersby. The Malcolm Island Lions Club of Sointula provided working groups as needed to help with the assembly and raising of the tower.

One notable consideration in the selection of the tower for Sointula was the potential for high winds. This necessitated a heavy duty tower and a large concrete anchor, see pictures below.



First Customers

By mid-March 2006 installation of the access point in Holberg was complete and the connection to the Internet established. A small group of trial customers were put on-line and a period of testing begun.

Although Sointula was ready at about the same time, back-haul connectivity from Telus was delayed due to internal issues. A temporary connection to allow for testing in Sointula was arranged by late March 2006.

The initial customer reaction and feedback over a one month test period was mostly positive and by mid-April 2006 the work of signing up subscribers in Holberg was under way.

Sointula followed in late May 2006, once an interim back-haul connection was installed. Customer uptake has proceeded steadily through the summer and September 2006.

Expanding Boundaries

In mid-June a planned repeater site was installed for customers in Rough Bay, a portion of Sointula that was in shadow from the main tower.

Late in June 2006 the possibility of expanding the network on Malcolm Island to include Kaleva Rd and Mitchell Bay arose. Service for these areas had initially been planned for mid 2007. Working with the `Namgis First Nation, a repeater site on near-by Cormorant Island was established by early August 2006 and ready for customers by late August 2006 well in advance of the network plan.

A further expansion to cover Hyde Creek and Nimpkish Heights on North Vancouver Island was installed in mid-August 2006. This area was originally contemplated for late 2007. Although the service does not reach all of Hyde Creek or Nimpkish Heights, it does cover a significant area stretching from the ferry terminal in Port McNeill in the north to Alder Bay in the south.

These unexpected service areas have met with good customer response and have helped put the Ragged Edge Community Network Society on a good financial footing much earlier than expected.

The Future

Ragged Edge Community Network is now an established Internet Service Provider on northern Vancouver Island. Quatsino is expected to come on-line in the near future. The communities of Coal Harbour and Zeballos are well along in planning and fund raising and are expected to begin installation in early 2007. Additional communities and organizations have contacted the Society expressing interest in service for their areas.

The progress to date has been possible only through the efforts of the people at Community Futures Development Corporation of Mount Waddington, the volunteers, the support of the communities and the customers for whom the service is provided. Thank-you to all those who have helped. Without it this job would have been impossible.

The Ragged Edge Community Network and Society are providing service and are poised to expand to help other unserved or under-served areas. The work that has been done in northern Vancouver Island is a model for other communities of British Columbia.

Contact Information

Ragged Edge Community Network Society
#14-311 Hemlock St.
Port McNeill, B.C., V0N2R0
250-956-2220
info@recn.ca
<http://www.recn.ca>

Evelyn Clark
Community Futures Development Corp. of Mt. Waddington
#14-311 Hemlock St.
Port McNeill, B.C., V0N2R0
250-956-2220
evelyn@recn.ca

Kevin Battersby
Sea Star Solutions Ltd.
401-110-174 Wilson St.
Victoria, B.C., V9A7N7
250-514-2063
kevin@seastarsolutions.com