

# Remote Site Information Technology Assessment

for the Municipality of Bonne-Esperance  
Lower North Shore, Quebec

Prepared for



by the



Coasters Association

March ,2004

# **Remote Site Information Technology Assessment**

for the Municipality of Bonne-Esperance

Prepared for  
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## Table of Contents

<b>Acknowledgements</b> .....	<b>i</b>
<b>Executive Summary</b> .....	<b>1</b>
<b>Background to project</b> .....	<b>3</b>
<b>Assessment of information technologies in MBE</b> .....	<b>5</b>
Current state of information technologies	
Future IT needs	
Appropriate technologies	
Recommendations for upgrading IT services	
Revenue generation	
<b>Strategic plan</b> .....	<b>15</b>
<b>Annexes</b> .....	<b>17</b>
1. Coasters Association	
2. Communications	
3. Coasters Association - IT assessment	
4. Survey	
5. Financial estimates	
<b>Summary - English</b> .....	<b>37</b>
<b>Sommaire - Français</b> .....	<b>41</b>



## Executive Summary

### **Assessment of information technologies in MBE**

Computer usage appears to be prevalent amongst households, and use of the Internet and e-mail is high amongst most of the computer users. Many of them would like to have hi-speed access if it were to be offered at a reasonable price. One of the secondary attractions of hi-speed access mentioned is that it liberates the use of the regular telephone line. There is no access to a local point of sales and service for computers, so technical assistance for parts and repairs is in great demand.

### **ICT Developments**

There are a number of larger initiatives in the planning and implementation phases in the region, including the possible introduction of fibre optics and a microwave system for hi-speed financed by Villages branché. The timing, cost and scope of the project leave it uncertain as to when investments will be made. The Smart Labrador project, financed by the Industry Canada SmartCommunities program, is nearing completion and is a possible source of future collaboration (DSL installation), along with the Quebec-Labrador Foundation. The Department of Fisheries & Oceans is planning to establish an intranet for the 60 small harbours in the eastern shores region of Quebec; they have indicated an interest in collaborating with any hi-speed infrastructure initiatives. Hydro-Québec is currently experimenting with technology that would allow the transmission of telecommunications signals via the electrical grid, but Hydro reports that they will not know for at least a year whether it is a viable option in Quebec. The National Satellite Initiative (NSI) from Industry Canada has a program to provide bandwidth allocation to remote communities that are not likely to be serviced by broadband infrastructure or have hi-speed access (other than by satellite.)

### **Recommendations for upgrading IT services**

There are three viable options for wireless satellite connectivity:

- Community-wide, using one satellite receiver to serve the whole community (i.e. Old Fort Bay) with a wireless area network (WAN) for distribution
- Individual systems, with one satellite receiver per subscriber (i.e. one household)
- Hybrid systems, that would see numerous individual satellites installed at selected points throughout the community and connect nearby subscribers using mini-WANs

Each option has its advantages and disadvantages in terms of cost and service capacity, and therefore no one option can be recommended for all installation points.

### **Strategic plan**

A meeting of stakeholders interested in forming an information and communications technology (ICT) structure for MBE should be held, and this for the purpose of coordinating, overseeing and eventually managing wireless hi-speed connectivity delivered by satellite. This would be followed by community consultations, establishment of an operating structure (non-profit, co-op) and creation of a business and technology plan. Pilot locations would be selected to test out the feasibility and establish the practical functions and capacities of the various options before full implementation of the plan.



## **Background**

Information technologies (computers, Internet, etc.) are an essential component of modern economic development strategies. The Lower North Shore has lagged behind other areas in terms of equipment, infrastructure and human resource capacity for using information technologies as an integral part of their community development efforts (i.e. no hi-speed access.) Recent innovations in this area allow for the reception of hi-speed (broadband) Internet reception via satellite; with establishment of local area networks (LANs) connected to each satellite point-of-delivery, the prospect exists for significant improvements to the information technology capacity of remote locations such as MBE, as well as local revenue generation from service provision once the LAN is established.

### **Aim of the project**

The aim of the project is to carry out an assessment of the current levels of information technology infrastructure and resources in the Municipality of Bonne Esperance (MBE) as the first step in developing an information technology plan to support economic diversification efforts in the region. This will include equipment, infrastructure and skills of individuals, businesses, institutions and organizations. The project will then determine the potential demand for enhanced services and examine the various options related to upgrading equipment, infrastructure and skills, as well as the potential for generating revenue from service delivery.

Finally, the project will make recommendations for implementing information technology upgrades and potential sources of investment and financial support. A successful outcome to the project will serve as a model for other Lower North Shore communities to establish self-sustaining broadband networks on a local basis rather than wait for cable or fiber-optic networks which may take many years to reach these remote communities.





## **Assessment of Information and Communications Technologies in MBE**

A qualitative assessment was conducted on behalf of the Coasters Association using the following means (in no particular order):

1. A mail out survey was distributed to the 300 postal addresses in the MBE, with 72 responses (24% response rate.) A copy of the survey questionnaire is contained in the annexes.
2. A series of 7 interviews (2 by telephone and 5 in-person) were conducted with individuals representing entities either involved in ICT use in the community, or with specific needs for ICT use (schools, business, and organizations).
3. A number of discussions and meetings (12 by telephone and 2 in-person) were held with IT suppliers and federal department representatives.
4. An open information meeting for community representatives was held on February 17<sup>th</sup>, 2004, and a public presentation and feedback session on the assessment findings will be held at the Coasters Association annual meeting in St. Augustine on April 3<sup>rd</sup>, 2004.

The survey attempted to discern the numbers & types of computers in use, the types of computer use, and the levels of computer knowledge & skill. For the Internet, the number of Internet users with their own computer, and those using another computer (i.e. at work, school). In addition, questions were asked about the types of on-line use, levels of knowledge & skill related to the Internet, and E-commerce usage. Lastly, respondents were queried about available Internet services, who use which, prices of the different services and other IT uses (i.e. distance education, health services, etc.)

The target respondents were households, services and institutions (i.e. health clinic), local government and agencies (i.e. CLD, MBE, etc.), schools, organizations and businesses.

## SURVEY HIGHLIGHTS

300 surveys sent by mail to MBE  
72 returned

95% of respondents have a computer  
90% have Win 98 or newer  
80% have a computer less than 4 years old  
80% don't plan to buy a new one soon  
75% have one computer  
50% of households have more than one computer user

### Main uses for the computer are:

Internet	90%
E-mail	↓↓↓
Games	
Word processing	
Burning CDs	
Homework	50%

65% of users are self-taught  
95% have access to the Internet, 85% from home

### Main uses of the Internet are:

E-mail	92%
Research	↓↓↓
Web browsing	
Chatting	
Downloading	
On-line shopping	45%

90% said they would subscribe to hi-speed if available  
50% would pay between \$20-30

### Future needs:

60% consider training to be important for computers and Internet  
80% consider local technical support to be important

## **Conclusions to be drawn from the MBE assessment**

### Computer usage

Computer usage appears to be prevalent amongst households, although it is difficult to assess precisely as very few (2) people without computers responded to the survey. Comparative indications in the neighboring Labrador region situate household computer usage between 75% to 80%.

### On-line usage

Use of the Internet and e-mail is high amongst most of the computer users, and many of them would like to have hi-speed access if it were to be offered at a reasonable price (\$30-45). One of the secondary attractions of hi-speed access mentioned is that it liberates the use of the regular telephone line.

### Technical services

There is no access to a local point of sales and service for computers, so technical assistance for parts and repairs is in great demand.

### Upgrading

The current difficult economic situation in the area due to the closure of the cod fishery precludes any significant investment in new computer equipment and software by individuals.

## **Current state of information technologies**

Aside from regular dial-up access, which is mostly provided by Telus and a few smaller ISPs, there is little Internet protocol (IP) usage with other more advanced technologies. All households, local businesses and even the schools connect to the Internet by dial-up.

Despite the prevalence of satellite television receivers (Bell Expressvu, StarChoice), very few households are using the technology for the hi-speed download capacity offered as a secondary service. This is due to the elevated cost of maintaining a local ISP account (for local access) in addition to the additional fees paid on top of the regular television subscription charges, and having to continue to use the regular telephone line to connect outbound.

The CLSC in St-Paul's River is able to conduct videoconferencing sessions using installed ISDN lines, but this is a very expensive option for most community and local business uses. There is no cellular phone coverage in the area.

Inquiries conducted in the course of the project revealed that informal attempts had been made to set up hi-speed Internet access in neighbouring Blanc Sablon, but that no substantive progress had been made in this regard. Blanc Sablon has a community cable television station (co-op) with cabling installed throughout the municipality, but it was not possible to ascertain whether the cabling would be adequate to also carry hi-speed Internet (à la Vidéotron.)

## **Meeting future IT needs**

During meetings and telephone inquiries, there was a high level of interest expressed by the members of the MBE communities in the development of broadband capacity for ICT, as well as access to hi-speed Internet on a local basis. There was a generally high level of awareness of the potential of having better and affordable access to more advanced ICT services. This was not only from the perspectives of schools for distance learning, and health facilities for tele-health, but also from individuals and organizations. One individual remarked that his work as a transport dispatcher could be done from home if reliable hi-speed were available, rather than having to leave home on a seasonal basis to an urban centre. During the course of research for this project, the following general ICT initiatives were noted:

### Villages branché

A regional consortium has been formed to develop a proposal for fiber optic installations for the Cote-nord region (Sept-Isles to Blanc Sablon). This consortium, composed of school boards, municipalities, regional development agencies and other regional institutions, has prepared a proposal to install fiber optic cable from Sept-Isles to Natashquan, and then connect the isolated communities of the Lower North Shore via point-to-point microwave installations. The proposition, estimated to cost \$8.8 million, is currently on hold as the Villages branché program (provincial program for supporting broadband infrastructure) is frozen pending budgetary review; a \$6.7 million subsidy would be required from the program in order for installation to go ahead.

Even with the subsidy, the proposal is limited to point-to-point installations (such as schools, hospitals and municipal buildings), meaning that community access for individuals, organizations and businesses is far from assured. There are also substantial and recurring operational costs to be born by users, and so it is not clear when the plan will be implemented, or when it will provide access for non-institutional users.

### Smart Labrador ([www.smartlabrador.ca](http://www.smartlabrador.ca))

The Labrador region was awarded one of the initial Smart Communities grants by Industry Canada in 1999. Contact with the regional organization that oversees the implementation of the Smart Labrador program, in addition to being a source of valuable information, indicated a willingness to collaborate with whatever developments eventually take place in MBE, as was the Quebec-Labrador Foundation. These indications were, of course, informal and non-specific, but considering that Smart Labrador is well on its way to implementing many of the same ICT advancements that would benefit MBE, it is an avenue of cooperation worth keeping open. The Labrador project is currently offering video conferencing services to schools and health facilities, as well as hi-speed internet access to these locations and CAP sites. The bandwidth is provided by Telesat via C-band and services are offered in partnership with Alliant-NewTel. The project has secured funding for a phase 2 installation of DSL lines through the Industry Canada BRAND initiative.

### Department of Fisheries & Oceans

DFO is currently planning to set up an intranet to connect together the 60 small harbours that are located on the eastern shore of Quebec and managed by local, non-profit harbour authorities. The purpose of the intranet would be to provide a standardized venue for internal communications, weather, commodity pricing, etc. The useful aspects of such a portal can be greatly enhanced when hi-speed access is available, as it is in some of the ports (i.e. Sept-Isles). However, it becomes difficult to provide a high-end service if only half the locations can use the tool effectively and to its fullest extent. Therefore, DFO has expressed an interest in the potential of wireless hi-speed access to serve the remotely located harbours and collaborating with infrastructure installations if that assists both the harbour and the local community.

### Hydro-Québec

The provincial electricity utility is currently experimenting with technology that would allow the transmission of telecommunications signals via the electrical grid. This is a significant development for all communities because it requires no additional infrastructure and allows users to connect to the Internet through ordinary electrical outlets. While this has been successfully implemented on an experimental basis in Sweden, Hydro reports that they will not know for at least a year whether it is a viable option in Quebec.

### Telus

This is the local and regional telcom. Local inquiries revealed no indication that the installation of new technologies to allow hi-speed access via the telephone lines was imminent. There was a suggestion that Bell would be trying to provide hi-speed access as a competitive move against Telus but there was no way to verify this. Despite the uncertainty of this type of information, it is important to keep in mind that the threat of competition (i.e. local satellite reception) has been known to prompt the telcos into advancing their hi-speed installation upgrades in order to maintain market share.

### National Satellite Initiative (NSI)

Industry Canada has a program to provide bandwidth allocation to remote communities that are not likely to be serviced by broadband infrastructure or have hi-speed access (other than by satellite.) The NSI plans to make allocations of bandwidth from the Anik2 satellite at no cost to these communities through a bidding process. Community applicants have to demonstrate need, on-ground delivery capacity and a sound business plan in order to be successful. The results of the first round of bids, made available to institutions only, is to be announced in spring 2004, and a second round available to institutions and communities for a total of 100MB of bandwidth capacity, is to open up shortly thereafter. The NSI offers the opportunity to reduce the costs of hi-speed delivery to remote communities.

## Appropriate technologies

There is no doubt that for the immediate future the best alternatives for ICT development are with ground-based infrastructure – either broadband (fibre optics) or hi-speed (DSL, ADSL) – where available. Given that the prospects for either being available in the short-term in communities such as MBE are slim to remote, wireless delivery of connectivity offers the best – although limited – alternative.

As previously mentioned, any individual that wants hi-speed access via satellite television can subscribe for an additional \$30 per month. However, covering the monthly subscription fees to the television service and a local ISP provider increases the cost to at least \$80 per month, and if an additional telephone line is required so that the telephone line is not always tied up, the cost can easily exceed \$100 per month.

## Satellite delivery

### The good news . . .

The recent positioning of commercial satellites for hi-speed internet connectivity has now made the service available almost anywhere where there is a line of site to the sky for a receiver dish. Satellite receivers come in various sizes – small, medium and large – so they can be installed to suit the size of the community being served. The latest wireless protocols mean that the internet signal can be received by one dish with the capacity to supply the whole community, and distributed as a WAN (wireless area network) eliminating the need and expense to install wiring on poles. Speeds range up to 1.5mbps (the faster the speed, the more the monthly fee), but monthly fees are in line with ground-based services of similar speed (128kbps and up.) Subscribers no longer have to tie up their telephone lines, and the cost of a dial-up ISP is eliminated.

### The bad news . . .

As with all technology, however, there is no paradise – there are limiting factors to wireless satellite. The biggest impediment is the monthly volume thresholds (MVT) – limits on the amount of data that an individual user can download on a monthly basis. These limits (they vary depending on the speed subscribed to) are put in place to ensure that all subscribers get fair access as the capacity of the satellite system is more restricted than that of cable, DSL or ADSL. If users are restricting their use to e-mail and web browsing, then the satellite installations are more than adequate; if the user is downloading large documents, software or digital audio and video files, then the MVT becomes too restrictive, or too expensive as costs go up incrementally as the threshold is increased.

A service package offering a connection speed of 256kbps has a MVT of 4.1Gb, which is equal to approximately 410 songs in MP3 format; 50 households with a teenager downloading just one song each per night comes out to 1,400 songs, or 14Gb of digital audio, per month. To accommodate that download capacity – which is near the maximum for these systems – the monthly service charge rises from \$630 to \$2,717, not to mention the cost if they download two songs per night.

In addition, wireless networks, particularly for the WAN component, require much more technical support and service than a ground-based distribution system. Whether the WAN is by radio wave or the 802.11 protocols, technical support in remote areas is not just a service call away, so there has to be someone on site to be able to respond to system glitches. Ground-based systems are more expensive to install, but relatively trouble-free once set up. Wireless systems are cheaper to install, but relatively more costly to maintain.

#### The happy medium?

A second option for wireless satellite are individual commercial units for households, small businesses, even schools. Similar in size to the satellite television receivers, they function on a send and receive basis without need for a telephone line, and operate at various hi-speed rates. These individual satellite installations also offer two other additional advantages:

- The MVT is replaced by a download threshold (DT) which is more of a guideline subject to the application of a fair access policy. The essential difference is that the DT is applied on short-term usage (1-4 hours) rather than on a monthly total. This would allow a user to download a large piece of software at one time, the only penalty being unable to download further files until the following day. If the total usage of the satellite is low for that particular time period, there may not be any restriction on download capacity at all.
- The receiver can, as an option, accommodate up to 15 individual users, so that one receiver could be shared by, for example, a number of students in a computer lab, or by a number of households or businesses located in proximity and connected by a mini-WAN (thus sharing costs between households.) The higher the number of concurrent users, the higher the monthly service fees.

The downside is that each community would need a greater number of receivers, and at \$500 for each installation plus a minimum of \$100 per month access fee, the price tag could mount up. These costs could be minimized by sharing services through a mini-WAN, but that would also necessitate the presence of on site technical support for system maintenance.



## Recommendations for upgrading IT services

Notwithstanding the arrival of ground-based connectivity for hi-speed internet access, wireless satellite systems present a viable alternative. However, there is not one satellite size that fits all situations; generally speaking, there are three basic options:

### Community-wide

- One satellite to serve the whole community (i.e. Old Fort Bay) with a WAN for distribution
- Approximate cost including installation would be \$30,000
- Monthly access fee per subscriber \$30, plus additional \$1,000 per month divided by the number of subscribers
- Potential additional fees for local WAN equipment and maintenance

### Individual

- One satellite receiver per subscriber (i.e. one household)
- Installation cost of \$500, although a bulk purchase may reduce the cost
- Monthly access fee of \$100-130 per receiver for residences, \$120-680 for businesses

### Hybrid

- Numerous individual satellites installed at selected points throughout community
- Installation cost of \$500, although a bulk purchase may reduce the cost
- Monthly access fee of \$100-130 per receiver for residences, \$120-680 for businesses
- Potential additional fees for local WAN equipment and maintenance

Each option has its particular benefits and drawbacks, and each potential installation would have to be analysed individually to determine the best option to choose. For example, there may not be sufficient community interest to justify a community-wide installation in Old Fort Bay, so the hybrid option could be installed at the school with a mini-WAN to hook up the community centre and two local businesses. Alternately, there could be sufficient subscriber interest in St-Paul's River to install a community-wide system with a WAN; a small number of houses that are not within line-of-sight of the wireless distribution tower could have access through a hybrid system. Individual households, businesses or institutions could, of course, have their own receiver if they are prepared to pay the additional costs.

## **Revenue generation**

Current pricing for wireless satellite systems suggests that monthly subscriber fees for each household would range between \$35-60 per month. The actual price will depend on the number of subscribers for each satellite receiver (assuming multiple users) and whether there are subsidies available for installation. Costs of equipment would be amortized over 36 months for individual subscriber modules (to connect the computer to the WAN), and 60 months for hardware. The number of months used to calculate amortization rates are based on estimates for equipment replacement. The monthly rates could be dropped by \$10-20 if subsidy can be found to cover the costs of installation.

These calculations do not cover the cost of maintenance, but assuming the need for a half-time position, a \$10 monthly subscription fee would cover the cost based on the potential number of subscribers in MBE. Thus, with a proper business plan and a reasonable rate of subscription, the provision of hi-speed internet service could be priced within expectations and generate sufficient revenues to cover monthly subscription fees and on-going maintenance costs, especially if capital costs are not included. Even if the capital costs are paid by the subscriber and amortized over the appropriate period, the monthly subscription fee would still be within the range offered for similar ground-based systems by telcos.

A detailed estimate of revenue and expenses for the various options are included in the annex.



## Strategic plan

Regardless of the option chosen for wireless satellite connectivity in MBE, it cannot be done on a cost-effective and useful basis (i.e. all those who want hi-speed can get access) unless the installation and on-going operations are managed in a coordinated approach. Certainly schools and some businesses and institutions would be able to proceed unilaterally because they have the budget and greater need for such systems. But they could also realize greater savings and enjoy greater capacity if wireless satellite is established on the premise that the whole community should have access if so desired.

The companies that sell and install the satellite systems, knowing that they are dealing with remote communities, also have a commitment to assist communities with their ICT needs. They often provide planning, consulting and management services, and offer contributions in-kind for matching funding programs. While these will be essential in the set up phase of establishing wireless hi-speed internet, the on-going costs, particularly given the travel costs associated with access to the Lower North Shore, may be substantial.

Therefore, a coordinated approach by the community to establish a wireless hi-speed internet system in MBE is recommended due to the benefits of locally controlled ICT development and job creation, and would proceed as follows:

### Stakeholder meeting

A meeting of stakeholders interested in forming an information and communications technology (ICT) structure for MBE would be held, and this for the purpose of coordinating, overseeing and eventually managing wireless hi-speed connectivity delivered by satellite. This could (and should) be enlarged to include all communities on the Lower North Shore.

### Consultation

The stakeholder group would conduct a further consultation with the community and interested parties to confirm the extent of commitment to subscribe to the eventual provision of hi-speed internet access, and in particular which satellite options potential subscribers prefer.

### Set up

The stakeholder group would determine the format (non-profit, co-op) of the structure, as well as solicit appropriate partners (telcos, suppliers, government, etc.)

### Planning

The new entity would create a business plan, particularly with regard to sources of financing, and start development of a technology plan as the eventual basis for installation of equipment and service provision.

### Pilots

The new entity would select pilot locations to test out feasibility and establish the practical functions and capacities of the various options.

### Implementation

The new entity, based on the evaluation of the pilots, will adapt the business and technology plans if necessary, and proceed with equipment installation and service provision.

### Other elements

Given the increasing convergence of different applications and digital technology, the new entity may wish to examine the possibility of broadening the scope of its ICT activities. For example, community radio and television are just different forms of transmitting information and communications via technology. There may be benefits in offering joint operating and delivery mechanisms as part of an overall approach to serving the ICT needs of the Lower North Shore.

This outline can also be used as an ICT template for wireless internet access by other Lower North Shore and remote communities along the eastern seaboard of Quebec. More detailed documentation to support the set up and planning process has been developed by Industry Canada for use by communities in these types of ICT development activities and is available on-line at [www.smartcommunities.ca](http://www.smartcommunities.ca)

## ANNEX 1 - Coasters Association

### OVERVIEW

The Coasters Association is a non-profit organization formed in St. Augustine in 1988 by a group of concerned citizens of the Lower North Shore. The association was incorporated in La Tabatiere in 1991 with the clear objective of protecting and furthering the interests of the population and contributing to the vitality of the Lower North Shore.

In 1992, the office which was first situated in St. Augustine was relocated to St. Paul's River. In 1993, the Coasters Association lost their office due to an uncontrollable fire and was forced to seek shelter in temporary residences in the area. However, with the generous support of our members, the Secretary of State, the M.P's office, Alliance Quebec, Regional Associations and many other organizations, the Coasters Association was given the strength to overcome this setback and rebuild. In 1998, the office relocated once more to a larger temporary setting.

The Coasters Association has had many Presidents over the years, each one uniquely contributing and adding their own special touch. The Founding President was Mr. Denis Murray and the other Presidents were: Mr. Medric Maurice; Ms. Joan Mckinnon; Mr. Barry Roberts; Mr. Wilson Evans; Mr. Scott Buckle; and Mr. Tony Roberts. Our current President is Mr. Anthony Dumas.

The Association's work is partially funded by the Department of Canadian Heritage, while the remainder of its funding is derived from fundraising, donations and membership drives. At present, the Coasters Association's membership stands at 3,542. With each new member, the Association becomes stronger and the objective of identifying and responding to pressing needs more feasible.

To accomplish the various tasks at hand, nine elected directors, representing the five municipalities of the Coast, administer the Association and ensure that it remains attuned to the specific needs of the communities. Channelled through a Board of Directors, the Association serves as a reliable source of information for residents of the Lower North Shore. The Association assists residents of the coast by bringing new skills, developing new programs, offering new services and by providing leadership training in each community to foster autonomy and development.

The Coasters Association is the only regional organization of the Lower North Shore representing all of the communities on all issues, and voicing their concerns as one collective body. The Board of Directors meets every second month to discuss common concerns and lobbying strategies, to share resources and to find potential solutions to specific problems linked to geographical isolation. These meetings serve to identify important issues and to implement needed programs.



## Coasters Association

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Press Release  
(for immediate release)  
January 16<sup>th</sup>, 2004

### Hi-speed Internet for Lower North Shore

*St-Paul's River, Quebec* - Anthony Dumas, President of the Coasters Association, is pleased to announce that the organization will carry out a pilot project to help bring hi-speed Internet access to communities along the Lower North Shore. The "Remote Site Information Technology Assessment" project, financed through a grant from Industry Canada, will carry out an assessment of the state of information technologies in the Municipality of Bonne Esperance and examine the potential for hi-speed Internet via satellite signal.

"Information technologies are an essential component of modern economic development strategies," says Mr. Dumas about the importance of the project. "The Lower North Shore has lagged behind other regions for the infrastructure and human resource capacity to put computers and the Internet to work as part of our community development efforts - this project will change that situation for the better."

He notes that recent innovations allow for the local reception of hi-speed (broadband) Internet reception via satellite and with the establishment of a local area network (LAN) connected to each satellite point-of-delivery, hi-speed Internet access can be provided for local businesses, services and residents. The assessment will be carried out in the three villages of the municipality (Old Fort, St-Paul's River & Middle Bay) including the potential for local revenue generation and job creation from the service. The information collected in the Bonne Esperance assessment will also be used to prepare a 'how to' plan for setting up broadband services in other Lower North Shore communities.

"Hi-speed Internet access will open up the road for local economic development, and improve the delivery of educational and social services. We can't afford to wait any longer for the information highway to be built on the Lower North Shore, so it's vital that we find ways to get the job done for ourselves," Mr. Dumas concluded.

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**Aim of the project**

To carry out an assessment of the current levels of information technology infrastructure and resources in the Municipality of Bonne Esperance (MBE) as the first step in developing an information technology plan to support economic diversification efforts in the region. A successful outcome to the project will serve as a model for other Lower North Shore communities to establish self-sustaining broadband networks on a local basis rather than wait for cable or fiber-optic networks which may take many years to reach these remote communities.

**Need for the Project**

Information technologies (computers, Internet, etc.) are an essential component of modern economic development strategies. The Lower North Shore has lagged behind other areas in terms of equipment, infrastructure and human resource capacity for using information technologies as an integral part of their community development efforts (i.e. no hi-speed access.) Recent innovations in this area allow for hi-speed (broadband) Internet reception via satellite; with establishment of local area networks (LAN) connected to each satellite point-of-delivery, the prospect exists for significant improvements to the information technology capacity of remote locations such as MBE, as well as local revenue generation from service provision once the LAN is established.

**Description of Project**

The project will determine the current state of information technology usage in the MBE; this will include equipment, infrastructure and skills of individuals, businesses, institutions and organizations. The project will then determine the potential demand for enhanced services and examine the various options related to upgrading equipment, infrastructure and skills, as well as the potential for generating revenue from service delivery. Finally, the project will make recommendations for implementing information technology upgrades and potential sources of investment and financial support.

**What is hi-speed Internet?**

Hi-speed Internet is the 'next generation' of the information highway, allowing users to access much greater amounts of information and services at much faster speeds. Hi-speed also allows users to access the Internet without using a regular telephone line (known as a "dial-up connection" because the computer modem dials access to the Internet through the telephone line.) Standard dial-up connections operate at up to 56K (kilobits per second) but in reality work at speeds as low as 14K depending on local telephone connections. Hi-speed connections (also referred to as DSL and cable Internet), operate at speeds ranging from 230K to 3mbps (megabits per second.) This is like comparing a horse and cart to a jumbo jet cargo plane in terms of speed and capacity to carry a load – in this case loads of digitized information.

**Why is hi-speed Internet so important?**

The Internet is no longer just e-mail and web browsing, but is now the gateway to many services such as on-line purchasing, registration forms, up-to-the-minute market information and distance education programs. These services need the greater speed and capacity of hi-speed Internet to operate easily and quickly, and future services such as telephony (Internet telephone calls without long distance charges) and video conferencing will make hi-speed Internet indispensable as government and business move toward Internet-only service provision.

**What can hi-speed Internet do for me?**

Hi-speed Internet access is even more important to rural and remote communities where mail and courier services are slower, and government offices and businesses are rarely located nearby. Hi-speed Internet access will allow residents and businesses in these communities greater choice for their purchases, easier access to services such as banking and registrations, and businesses and the self-employed will have access to much wider markets. Health clinics and small schools will have much more affordable access to 'at-a-distance' services and courses, and fishers will be able to access market and weather information by the minute. Families will be able to connect 'face-to-face' using web-cams, bringing a whole new meaning to the term "tele-communications."

**When will hi-speed Internet be available?**

Hi-speed Internet is now widely available in urban centres from telephone and cable television companies, but the expense of installing fibre-optic cables and new switching equipment means that broadband access in rural and remote areas will take much longer to become available. This is why Industry Canada, the federal department responsible for telecommunications, is investing in rural and remote communities to ensure that they have broadband access sooner rather than later.

The recent improvement in satellite capacity to deliver wireless Internet services (both upload and download) now means that rural and remote communities have other options for accessing hi-speed Internet. Although the satellite receiving equipment for hi-speed Internet is generally too expensive for an individual or even a small business to afford, the establishment of a local area distribution network connected to the satellite receiver can make hi-speed Internet available to local communities. The Coasters "Remote Site Information Technology Assessment" project aims to develop a plan for placing satellite receivers in appropriate locations around MBE and establishing local area networks so that hi-speed access is available at a reasonable price to all who want to use it.

## ANNEX 3 - IT Assessment for Coasters

### Coasters current IT status

LAN (Local Area Network)	None
File Server & Print Server	None
Internet	<ul style="list-style-type: none"><li>• 3 separate internet connections with Globetrotter</li><li>• 5 phone lines (including 1 dedicated fax line)</li></ul>
Hard ware (computers)	<ul style="list-style-type: none"><li>• 7 Pentium 200 MHz class computers running Windows 98</li><li>• 1Pentium 4 class computer running Windows-XP</li></ul>
Video Conferencing	None

### Recommendations for upgrading Coasters office

LAN (Local Area network)	T base 100 Network
File Server & Print Server	1 windows 2000 server running <ul style="list-style-type: none"><li>• VPN network for roaming profiles.</li><li>• File server</li><li>• Internet Sharing</li><li>• Print Server</li><li>• FAX Server</li></ul>
Internet	1 LinCsat hi-speed connection with shared wireless LAN
Hard ware (computers)	9 Pentium 4 class Computers running Windows-XP pro
Video Conferencing	Voice and Video Over IP (through the Internet) which will allow video conferencing with anyone with an internet connection and a Quick CAM & microphone (low cost and easy to setup equipment)
Community Outreach	1 Pentium 4 laptop 1 computer projector for PowerPoint presentations
Website	Website upgrade to provide interactive service (document download, registrations, etc.)

#### Notes:

1. Local Area Network consists of 2 or 3 small network switches and around 500 - 700 feet of cat. 5 networking cable.
2. File and print server consists 1 server class computer with RAID capability for backing up data
3. Windows 2000 server with VPN for roaming profiles support. This computer could also serve as the system administrator's computer.
4. 1 UNIX computer to act as an Internet gateway to protect the Office network from hackers.
5. Computer hardware: AMD Athlon XP 2500+ CPU's to give better performance for Office programs.

Coasters Association

# INTERNET SURVEY

For the Municipality of Bonne Esperance  
Middle Bay – St-Paul’s River - Old Fort

The Coasters Association is carrying out a pilot project to help bring hi-speed Internet access to communities along the Lower North Shore. As the first stage of this project, we are doing an assessment of computer and Internet use in the Municipality of Bonne Esperance, as well as identify the demand for hi-speed access, computer services and training. Your cooperation in filling out and returning this short questionnaire is greatly appreciated. *Thank you.*

Please return to:

Coasters Association, PO Box 188, St-Paul’s River, QC G0G 2P0, or by fax: 418-379-2621

E-mail the Coasters for an electronic copy of this questionnaire & return by e-mail:  
coasters@globetrotter.net

**Do you have a computer?**

Yes \_\_\_ No \_\_\_

*If “yes”:*

Household \_\_\_ Business \_\_\_

How old is the computer? 1-2 yrs \_\_\_ 3-4 yrs \_\_\_ 5 yrs+ \_\_\_

Operating system? Windows: 95 \_\_\_ 98 \_\_\_ 2000 \_\_\_ ME \_\_\_ XP \_\_\_

Mac: \_\_\_\_\_

If you have more than one computer, indicate how many? \_\_\_\_\_

How many persons in your household or business use the computer? 1 \_\_\_ 2 \_\_\_ 3 or more \_\_\_

**Do you plan to purchase a new computer in the next 12 months?** Yes \_\_\_ No \_\_\_

**What are the main uses for the computer?**

*(mark all that apply)*

- |  |  |
|--|--|
| <input type="checkbox"/> Word processing | <input type="checkbox"/> Book-keeping        |
| <input type="checkbox"/> Spreadsheets    | <input type="checkbox"/> Games               |
| <input type="checkbox"/> E-mail          | <input type="checkbox"/> Homework            |
| <input type="checkbox"/> Internet        | <input type="checkbox"/> Burning CDs or DVDs |
| <input type="checkbox"/> Home-office     | <input type="checkbox"/>                     |
| Other _____                              |  |

**Please describe your level of computer skill?**

- |  |  |
|--|--|
| <input type="checkbox"/> Beginner      | <input type="checkbox"/> Self-taught                   |
| <input type="checkbox"/> Intermediate  | <input type="checkbox"/> Introductory course           |
| <input type="checkbox"/> Knowledgeable | <input type="checkbox"/> School program or certificate |
| <input type="checkbox"/> Expert        |  |

**Do you have access to the Internet?**

Yes \_\_\_ No \_\_\_

If "yes":

- at home     at work     at school    other \_\_\_\_\_

**What types of activities do you carry out over the Internet?**

*(mark all that apply)*

- |   |  |
|---|--|
| <input type="checkbox"/> E-mail                   | <input type="checkbox"/> On-line purchases                   |
| <input type="checkbox"/> Web browsing             | <input type="checkbox"/> Marketing to customers              |
| <input type="checkbox"/> Research                 | <input type="checkbox"/> Making sales                        |
| <input type="checkbox"/> Chat                     | <input type="checkbox"/> Filling out forms and registrations |
| <input type="checkbox"/> Downloading (i.e. music) | <input type="checkbox"/> Courses                             |
| <input type="checkbox"/> Gaming                   | <input type="checkbox"/> Other _____                         |

**Would you subscribe to hi-speed Internet if it was available?** Yes \_\_\_ No \_\_\_

My current cost for Dial-up Internet access is:    \$ \_\_\_\_\_ per month

For hi-speed access, I am prepared to pay:    \$ \_\_\_\_\_ per month

**Future Needs**

	<i>Very important</i>				
	<i>Unimportant</i>				
Computer training	1	2	3	4	5
Internet training	1	2	3	4	5
Local technical support	1	2	3	4	5
Local computer sales	1	2	3	4	5
Public access to computers	1	2	3	4	5

**OTHER COMMENTS:**

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*For more information on this project or questionnaire contact: [michel.thomas@globetrotter.net](mailto:michel.thomas@globetrotter.net)*





## ANNEX 5 - Financial estimates

### **Broadband for remote communities in eastern Quebec**

Proposal submitted by Barrette Xplore Inc. for providing community-wide system to interested users in 15 remote communities in Eastern Quebec. We propose a satellite based Internet access and wireless based distribution platform to service these communities where there are more than fifty (50) prospective customers residing.

#### Satellite Base Station Equipment

One system required per community.

A 1.8M antenna is required to serve communities in this geographic region. (see satellite footprint map attached).

We will be using Tachyon products which include the antenna, radio and indoor unit (as applicable) with the price varying based on the antenna size and whether de-icing is provided.

Tachyon CPE with 1.8 M dish	Price (per unit) \$4,399
-----------------------------	-----------------------------

Basic (urban) Installation Costs:

Description    Price (per unit)	
Site Survey (to determine site suitability)	\$350

Basic Installation for 1.8M dish	\$1,900
Remote community installations may vary.	

#### Bandwidth Options

Primary Service product speeds, parameters, and prices are summarized in the following table:

Forward Channel Speed	Reverse Channel Speed	Monthly Cost (1 Year Term)
64 Kbps	32 Kbps	\$300
128 Kbps	64 Kbps	\$450
128 Kbps	128 Kbps	\$600
256 Kbps	64 Kbps	\$630
256 Kbps	256 Kbps	\$975
384 Kbps	128 Kbps	\$870
512 Kbps	128 Kbps	\$1,050
512 Kbps	512 Kbps	\$1,959
768 Kbps	128 Kbps	\$1,425
1.544 Mbps	256 Kbps	\$2,717
1.544 Mbps	512 Kbps	\$3,289

A one-year minimum service term applies to all service levels.  
 Based on the prospective number of customers per community we recommend the 384Kbps service should be sufficient.

Monthly Volume Thresholds - Primary Service

<b>Forward Channel Burst Rate</b>	<b>Reverse Channel Burst Rate</b>	<b>MVT</b>
64kbps	32kbps	800MB / month
128kbps	64kbps	1500MB / month
128kbps	128kbps	2000MB / month
256kbps	64kbps	2500MB / month
256kbps	256kbps	4100MB / month
384kbps	128kbps	4100MB / month
512kbps	128kbps	5100MB / month
512kbps	512kbps	8300MB / month
768kbps	128kbps	7200MB / month
1544kbps	256kbps	15000MB / month
1544kbps	512kbps	17000MB / month

The Primary Service offerings are priced as a flat fee per month with a monthly volume threshold (MVT) as defined below. Usage above these thresholds is transmitted with commercially reasonable efforts but is not guaranteed and Tachyon reserves the right to limit users to their monthly volume thresholds, through the application of various mechanisms, in the event that excess usage is unduly congesting the network. The Back-Up Service offerings have a 10 Mbyte monthly volume threshold with an additional cost per Mbyte used.

The bundled offering provides a direct connection to the Internet or connection to customer private line with the following features:

- One public IP address

Other characteristics of the service include:

- Proactive network monitoring
- Service Level Agreements (SLA)
- Satellite Transport

## Wireless Distribution

Connected to the Satellite Base Station, we would use Motorola Canopy product with frequency options of 2.4Ghz, 5.2Ghz and 5.7Ghz (unlicensed bands). Each community infrastructure requires an access point tower providing line-of-sight to customer's SM (Subscriber Module) CPE equipment. AP towers have 360 degree coverage and a range of 4 to 8 kms depending on frequency selected. (Note: range can be increased to 16 or 32 kms if SM CPE is equipped with an optional reflector dish @ \$149 each)

### AP Tower and SM CPE Pricing

Description	Price (per unit)
AP Tower (installed)	\$20,000.00
CPE Motorola SM Subscriber Module	\$499.00

### Infrastructure and CPE Installation costs

A basic (urban) residential SM CPE installation is \$99.00, Business (urban) \$299.00. Remote installations may vary. There are variable costs which include: shipping and travel costs for our technical and installation personnel. We'll need to discuss these issues in order to provide an accurate cost.

### Xplornet ISP Services

Monthly Subscriber Airtime Pricing: \$29.99 per month, includes: 5 E-mail accounts, 5MB Mailbox Space, 5MB Web Space, Web Mail Access, network management, remote monitoring, 24/7 bilingual customer care help desk.

### CAPITAL COST PROJECTIONS

#### Upfront Infrastructure Capital Costs.

Wireless distribution services users with Line of Sight to the AP Tower and assumes each AP Tower has more than fifty (50) customers ready to subscribe to the service within the first six (6) months.

Fifteen (15) Satellite Base Stations	\$ 65,985
Site surveys and Basic Installation	\$ 33,750
Fifteen AP Towers installed	\$ 300,000
Total capital Cost Request	\$ 399,735

We are willing to match funding for infrastructure in capital and in-kind services up to 50%.

Individual and hybrid systems

*LinCsat Residential Prices*

Service Offering	4000	DW6000	
	PowerOn \$99.95	Standard \$99.95	Professional Edition (PE) \$129.95
<b>LinCsat Network Access</b>	Unlimited	N/A	N/A
<b>Hours Included Per Month</b>	N/A	Unlimited	Unlimited
<b>Typical No. of Concurrent Users</b>	1	N/A	N/A
<b>Static Routable Public IP Address</b>	N/A	None	1
<b>E-mail Accounts</b>	5	5	5
<b>Mailbox Space (per email acct.)</b>	5MB	10MB	10MB
<b>Web Space</b>	5MB	5MB	10MB
<b>Web Mail Access</b>	Yes	Yes	Yes
<b>Maximum Number of TCP Connections</b>	22	N/A	N/A
<b>Business Class Internet Service</b>	No	N/A	Yes
<b>Downstream Connection Speed (up to)</b>	N/A	500 Kbps	500 Kbps
<b>Upstream Connection Speed (up to)</b>	N/A	50K	50K
<b>Download Threshold (MB)</b>	169	N/A	N/A
<b>Recovery Rate (Kb/sec)</b>	56	N/A	N/A

<b>Additional Dial-Up Account</b>	N/A	No	No
<b>Term Commitment</b>	12 months	12 months	12 months
<b>Self Hosted</b>	No	Yes	Yes
<b>Software Upgrade</b>	Manual	Automatic	Automatic

Prices do not include: \$75 System Access Fee or \$75 Annual Industry Canada License fee. \*LinCsat's prices and services are subject to change without notice. Prices do not include tax. Provincial and Federal Taxes may apply. Prices do not include satellite system acquisition. Some options are provided by a third party and may require additional equipment. Usage is subject to LinCsat's Fair Access Policy and user agreement. Additional information is available at [www.linCsat.com](http://www.linCsat.com). \*\* Customer selectable (a) Static Routable Public IP Address - while a LS750, LS1200, LS1800, LS2400 based subscriber can only get a maximum of 1 routable IP address, a 4020 - based user would be assigned none, 1 or 5 IP Routable Addresses based on the service plan selected. (b) Max. No. of TCP Connections - Total number of concurrent TCP/IP sessions available to the LinCsat site. (c) Business Class Internet Service - Internet service parameters are tuned to support a networked environment behind a single LinCsat unit. Each step up in the service plans provides an increase in the average aggregate throughput of IP traffic. Individual users behind the LinCsat satellite receiver will typically see speeds less than the site speed. (d) Download Threshold - Term applied to indicate the amount (volume) of data that can be downloaded continuously before the Fair Access Policy will restrict the download speed. Several variables affect this number including: speed of download, duration of download, and the plan's Recovery Rate. (e) Recovery Rate - Term refers to the speed at which a service plan recovers to normal Download Threshold. (f) Manual - by customer/Automatic - download by Satellite.

<b>BUSINESS CLASS</b>					
<b>Service Offering</b>	<b>Power 1</b>	<b>Power 1.1</b>	<b>Power 2</b>	<b>Power 2.1</b>	<b>Power 3.1</b>
	<b>\$119.95</b>	<b>\$144.95</b>	<b>\$279.95</b>	<b>\$299.95</b>	<b>\$679.95</b>
LinCsat Network Access	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Typical No. of Concurrent Users	2	2	5	5	15
Static Routable Public IP Address <sup>(a)</sup>	None	1	None	1	1
E-mail Accounts	6	6	12	12	20
Mailbox Space (per email acct.)	10MB	10MB	10MB	10MB	10MB
Web Space	10MB	10MB	10MB	10MB	10MB
Web Mail Access	Yes	Yes	Yes	Yes	Yes
<b>Maximum Number of TCP Connections<sup>(b)</sup></b>	30	30	45	45	80
Business Class Internet Service <sup>(c)</sup>	Yes	Yes	Yes	Yes	Yes
Download Threshold <sup>(d)</sup> (MB)	500	500	800	800	1000
Recovery Rate <sup>(e)</sup> (Kb/sec)	56	56	100	100	100
Term Commitment	12 months	12 months	12 months	12 months	12 months
Firewall**	N/A	N/A	N/A	N/A	N/A
Self Hosted	No	No	No	No	No
Software Upgrade <sup>(f)</sup>	Manual	Manual	Manual	Manual	Manual

<b>BUSINESS CLASS WITH 4020</b>					
<b>Service Offering</b>	<b>Power 4</b>	<b>Power 4.1</b>	<b>Power 4.5</b>	<b>Power 5</b>	<b>Power 5.5</b>
	<b>\$149.95</b>	<b>\$159.95</b>	<b>\$199.95</b>	<b>\$249.95</b>	<b>\$349.95</b>
LinCsat Network Access	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Typical No. of Concurrent Users	2	2	2	5	5
Static Routable Public IP Address <sup>(a)</sup>	None	1	5	None	5
E-mail Accounts	6	6	6	12	12
Mailbox Space (per email acct.)	10MB	10MB	10MB	10MB	10MB
Web Space	10MB	10MB	10MB	10MB	10MB
Web Mail Access	Yes	Yes	Yes	Yes	Yes
<b>Maximum Number of TCP Connections<sup>(b)</sup></b>	30	30	30	45	45
Business Class Internet Service <sup>(c)</sup>	Yes	Yes	Yes	Yes	Yes
Download Threshold <sup>(d)</sup> (MB)	500	500	500	800	800
Recovery Rate <sup>(e)</sup> (Kb/sec)	56	56	56	100	100
Term Commitment	12 months	12 months	12 months	12 months	12 months
Firewall**	Yes	Yes	Yes	Yes	Yes
Self Hosted	Yes	Yes	Yes	Yes	Yes
Software Upgrade <sup>(f)</sup>	Automatic	Automatic	Automatic	Automatic	Automatic

Prices do not include: \$75 System Access Fee or \$75 Annual Industry Canada License fee. \*LinCsat's prices and services are subject to change without notice. Prices do not include tax. Provincial and Federal Taxes may apply. Prices do not include satellite system acquisition. Some options are provided by a third party and may require additional equipment. Usage is subject to LinCsat's Fair Access Policy and user agreement. Additional information is available at [www.linCsat.com](http://www.linCsat.com). \*\* Customer selectable (a) Static Routable Public IP Address - while a LS750, LS1200, LS1800, LS2400 based subscriber can only get a maximum of 1 routable IP address, a 4020-based user would be assigned none, 1 or 5 IP Routable Addresses based on the service plan selected. (b) Max. No. of TCP Connections - Total number of concurrent TCP/IP sessions available to the LinCsat site. (c) Business Class Internet Service - Internet service parameters are tuned to support a networked environment behind a single LinCsat unit. Each step up in the service plans provides an increase in the average aggregate throughput of IP traffic. Individual users behind the LinCsat satellite receiver will typically see speeds less than the site speed. (d) Download Threshold - Term applied to indicate the amount (volume) of data that can be downloaded continuously before the Fair Access Policy will restrict the download speed. Several variables affect this number including: speed of download, duration of download, and the plan's Recovery Rate. (e) Recovery Rate - Term refers to the speed at which a service plan recovers to normal Download Threshold. (f) Manual - by customer/Automatic - download by Satellite.

**COSTING ESTIMATES**

**Tachyon Community System**

**50% uptake**

	<u>OF</u>	<u>SP</u>	<u>MB</u>	<u>BS</u>	<u>LdeBS</u>
<b>Revenues</b>					
no. households	105	157	33	101	375
50% uptake	53	79	17	51	188
monthly fee	\$70	\$70	\$70	\$70	\$70
<b>Total</b>	<b>\$44,100</b>	<b>\$65,940</b>	<b>\$13,860</b>	<b>\$42,420</b>	<b>\$157,500</b>
<b>Set up costs</b>					
hardware	\$6,870	\$6,870	\$6,870	\$6,870	\$6,870
installation	\$69	\$69	\$69	\$69	\$69
travel & shipping	\$69	\$69	\$69	\$69	\$69
LAN	\$2,875	\$4,175	\$1,075	\$2,775	\$9,625
<b>Total</b>	<b>\$9,883</b>	<b>\$11,183</b>	<b>\$8,083</b>	<b>\$9,783</b>	<b>\$16,633</b>
<b>Annual costs</b>					
Operating fee (minimum)	\$29,340	\$38,700	\$16,380	\$28,620	\$85,500
Service & repair	\$8,820	\$13,188	\$2,772	\$8,484	\$31,500
<b>Total</b>	<b>\$48,043</b>	<b>\$63,071</b>	<b>\$27,235</b>	<b>\$46,887</b>	<b>\$133,633</b>
<b>Surplus/deficit</b>					
<b>Per year</b>	<b>-\$3,943</b>	<b>\$2,869</b>	<b>-\$13,375</b>	<b>-\$4,467</b>	<b>\$23,867</b>
<b>Per subscriber, per month</b>	<b>-\$6</b>	<b>\$3</b>	<b>-\$68</b>	<b>-\$7</b>	<b>\$11</b>

<b>hardware</b>	\$26,666 at 10% interest amortized over 60 months
<b>Installation</b>	1% of hardware cost amortized over 60 months
<b>travel &amp; shipping</b>	1% of travel & shipping cost amortized over 60 months
<b>LAN</b>	\$500 for main module, one receiver for each user at \$100 each, at 10% interest amortized over 36 months
<b>Operating fee</b>	\$870 base fee plus \$30 per user, per month
<b>Service &amp; repair</b>	calculated at 20% of revenues





# **Remote Site Information Technology Assessment** for the Municipality of Bonne-Esperance

Prepared for  
**Industry Canada**  
Dominique Veilleux  
Manager, Section 41 - Official Languages Act  
235 Queen Street, Ottawa, Ontario K1A 0H5

By the  
**Coasters Association**  
PO Box 188, St-Paul's River, QC G0G 2P0

Coasters Secretariat  
Cornella Maurice      Executive Director

Project Team  
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Michel Thomas      Project Coordinator

# **Remote Site Information Technology Assessment**

## for the Municipality of Bonne-Esperance

### **Background**

Information technologies (computers, Internet, etc.) are an essential component of modern economic development strategies. The Lower North Shore has lagged behind other areas in terms of equipment, infrastructure and human resource capacity for using information technologies as an integral part of their community development efforts (i.e. no hi-speed access.) Recent innovations in this area allow for the reception of hi-speed Internet via satellite; with establishment of local area networks (LANs) connected to each satellite point-of-delivery, the prospect exists for significant improvements to the information technology capacity of remote locations such as MBE, as well as local revenue generation from service provision once the LAN is established.

### **Aim of the project**

The aim of the project was to carry out an assessment of the current levels of information technology infrastructure and resources in the Municipality of Bonne Esperance (MBE) as the first step in developing an information technology plan to support economic diversification efforts in the region. This included equipment, infrastructure and skills of individuals, businesses, institutions and organizations. The project then determined the potential demand for enhanced services and examined the various options related to upgrading equipment, infrastructure and skills, as well as the potential for generating revenue from service delivery.

Finally, the project made recommendations for implementing information technology upgrades and potential sources of investment and financial support. The project also serves as a model for other Lower North Shore communities to establish self-sustaining broadband networks on a local basis rather than wait for cable or fiber-optic networks which may take many years to reach these remote communities.

### **Executive Summary**

#### **Assessment of information technologies in MBE**

Computer usage appears to be prevalent amongst households, and use of the Internet and e-mail is high amongst most of the computer users. Many of them would like to have hi-speed access if it were to be offered at a reasonable price. One of the secondary attractions of hi-speed access mentioned is that it liberates the use of the regular telephone line. There is no access to a local point of sales and service for computers, so technical assistance for parts and repairs is in great demand.

## **ICT Developments**

There are a number of larger initiatives in the planning and implementation phases in the region, including the possible introduction of fibre optics and a microwave system for hi-speed financed by Villages branchés. The timing, cost and scope of the project leave it uncertain as to when investments will be made. The Smart Labrador project , financed by the Industry Canada Smart Communities program, is nearing completion and is a possible source of future collaboration (DSL installation), along with the Quebec-Labrador Foundation. The Department of Fisheries & Oceans is planning to establish an intranet for the 60 small harbours in the eastern shores region of Quebec; they have indicated an interest in collaborating with any hi-speed infrastructure initiatives. Hydro-Québec is currently experimenting with technology that would allow the transmission of telecommunications signals via the electrical grid, but Hydro reports that they will not know for at least a year whether it is a viable option in Quebec. The National Satellite Initiative (NSI) from Industry Canada has a program to provide bandwidth allocation to remote communities that are not likely to be serviced by broadband infrastructure or have hi-speed access (other than by satellite.)

## **Recommendations for upgrading IT services**

There are three viable options for wireless satellite connectivity:

- Community-wide, using one satellite receiver to serve the whole community (i.e. Old Fort Bay) with a wireless area network (WAN) for distribution
- Individual systems, with one satellite receiver per subscriber (i.e. one household)
- Hybrid systems, that would see numerous individual satellites installed at selected points throughout the community and connect nearby subscribers using mini-WANs.

Each option has its advantages and disadvantages in terms of cost and service capacity, and therefore no one option can be recommended for all installation points.

## **Strategic plan**

Regardless of the option chosen for wireless satellite connectivity in MBE, it cannot be done on a cost-effective and useful basis (i.e. all those who want hi-speed can get access) unless the installation and on-going operations are managed in a coordinated approach. Certainly schools and some businesses and institutions would be able to proceed unilaterally because they have the budget and greater need for such systems. But they could also realize greater savings and enjoy greater capacity if wireless satellite is established on the premise that the whole community should have access if so desired.

The companies that sell and install the satellite systems, knowing that they are dealing with remote communities, also have a commitment to assist communities with their ICT needs. They often provide planning, consulting and management services, and offer contributions in-kind for matching funding programs. While these will be essential in the set up phase of establishing wireless hi-speed internet, the on-going costs, particularly given the travel costs associated with access to the Lower North Shore, may be substantial.

Therefore, a coordinated approach by the community to establish a wireless hi-speed internet system in MBE is recommended due to the benefits of locally controlled ICT development and job creation, and would proceed as follows:

#### Stakeholder meeting

A meeting of stakeholders interested in forming an information and communications technology (ICT) structure for MBE would be held, and this for the purpose of coordinating, overseeing and eventually managing wireless hi-speed connectivity delivered by satellite. This could (and should) be enlarged to include all communities on the Lower North Shore.

#### Consultation

The stakeholder group would conduct a further consultation with the community and interested parties to confirm the extent of commitment to subscribe to the eventual provision of hi-speed internet access, and in particular which satellite options potential subscribers prefer.

#### Set up

The stakeholder group would determine the format (non-profit, co-op) of the structure, as well as solicit appropriate partners (telcos, suppliers, government, etc.)

#### Planning

The new entity would create a business plan, particularly with regard to sources of financing, and start development of a technology plan as the eventual basis for installation of equipment and service provision.

#### Pilots

The new entity would select pilot locations to test out feasibility and establish the practical functions and capacities of the various options.

#### Implementation

The new entity, based on the evaluation of the pilots, will adapt the business and technology plans if necessary, and proceed with equipment installation and service provision.

# Évaluation des technologies de l'information pour endroit éloigné

pour la municipalité de Bonne Espérance

Préparé pour  
**Industrie Canada**  
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# Évaluation des technologies de l'information pour endroit éloigné pour la municipalité de Bonne Espérance

## Historique

Les technologies de l'information (ordinateurs, Internet, etc.) sont un élément essentiel des stratégies modernes du développement économique. La Basse-Côte-Nord tire de l'arrière sur les autres régions en termes d'équipement, d'infrastructures et de ressources humaines pour faire des technologies de l'information une partie intégrante des efforts de développement communautaire (ex. : pas d'Internet à haute vitesse). Les récentes innovations dans ce domaine permettent de recevoir Internet à haute vitesse par l'entremise de satellite. De plus, la mise en place de réseaux locaux (LAN) branchés à chaque point de livraison satellitaire permettrait d'améliorer considérablement les technologies de l'information des endroits éloignés comme la municipalité de Bonne Espérance, ainsi que de générer des revenus une fois que le réseau est installé.

## But du projet

Le but du projet était d'évaluer le niveau actuel des infrastructures et des ressources en technologies de l'information dans la municipalité de Bonne Espérance pour la première étape de l'élaboration d'un plan de technologies de l'information pour appuyer les efforts de diversification économique dans la région. Cette évaluation inclut l'équipement, les infrastructures et les compétences des gens, des entreprises, des institutions et des organisations. Puis, le projet a déterminé la demande potentielle pour des services évolués et a examiné les diverses options associées à la mise à niveau de l'équipement, des infrastructures et des compétences ainsi que le potentiel pour générer des revenus par la prestation de services.

Finalement, le projet a fait des recommandations pour l'implantation de mises à niveau des technologies de l'information ainsi que pour les sources potentielles d'investissements et de soutien financier. Le projet sert aussi de modèle pour les autres communautés de la Basse-Côte-Nord pour l'établissement de réseaux à large bande auto-entretenus plutôt que d'attendre la venue du câble ou de réseaux de fibre optique qui peut prendre plusieurs années avant de se rendre dans ces communautés éloignées.

## Sommaire de synthèse

L'utilisation des ordinateurs semble être répandue dans les foyers et l'utilisation d'Internet et du courriel est élevée parmi les utilisateurs d'ordinateurs. Plusieurs d'entre eux aimeraient avoir Internet à haute vitesse s'il était offert à un prix raisonnable. Un des attraits secondaires mentionnés pour Internet à haute vitesse est qu'il libère la ligne téléphonique. Il n'y a pas d'accès à un point de vente local et de services pour les ordinateurs, donc la demande pour le soutien technique, les pièces et les réparations est très forte.

## **Développement des technologies de l'information et de communication (TIC)**

Il y a plusieurs initiatives en phase de planification et d'implantation dans la région, y compris l'introduction possible de fibres optiques et de faisceaux hertziens pour Internet à haute vitesse financés par Villages branchés. Le choix du moment, le coût et l'ampleur du projet laissent des doutes à savoir quand les investissements seront faits. Le projet *Smart Labrador*, financé par le programme Collectivités ingénieuses d'Industrie Canada, est presque terminé et est une source possible de collaboration future (installation DSL) ainsi que la Fondation Québec-Labrador. Le ministère des Pêches et des Océans planifie d'établir un intranet pour les soixante petits ports dans la région côtière de l'Est du Québec. Il a démontré un intérêt pour collaborer dans toute initiative d'infrastructures à haute vitesse. Hydro-Québec fait actuellement l'essai d'une technologie qui permettrait la transmission de signaux de télécommunications par l'entremise du réseau électrique. Cependant, des rapports indiquent qu'il faudra attendre au moins un an avant de savoir si le projet est une option viable au Québec. L'Initiative nationale de satellite (INS) d'Industrie Canada possède un programme qui fournit les services à large bande aux communautés éloignées qui ne seront probablement pas desservies par des infrastructures à large bande ou qui n'auront pas l'accès haute vitesse (sauf par satellite).

## **Recommandations pour la mise à niveau des services TI**

Il existe trois options viables pour la connectivité satellitaire sans fil :

- Communautaire, en utilisant un récepteur satellitaire pour desservir toute la communauté (ex. : Old Fort Bay) avec un réseau étendu sans fil (WAN) pour la distribution.
- Systèmes individuels, avec un récepteur satellitaire par abonné (ex. : une maison)
- Systèmes hybrides, où l'on verrait de nombreux satellites installés dans des endroits précis dans la communauté pour brancher les abonnés en utilisant des minis réseaux étendus.

Chaque option a ses avantages et ses inconvénients en termes de coût et de capacité de services et donc aucune option ne peut être recommandée pour tous les points d'installation.

## **Plan stratégique**

Peu importe l'option choisie pour la connectivité satellitaire sans fil dans la municipalité de Bonne-Espérance, elle ne peut être réalisée de manière efficace et rentable (brancher tous ceux qui veulent Internet à haute vitesse) sauf si l'installation et le fonctionnement continue sont gérés de façon concertée. Les écoles et certaines entreprises et institutions pourraient aller de l'avant unilatéralement grâce à leurs budgets et leurs besoins pour un tel système. Cependant, ils pourraient économiser davantage et avoir une capacité accrue si l'accès rapide à Internet était établi en supposant que tous les membres de la communauté puissent y avoir accès s'ils le désirent.

Les entreprises qui vendent et installent les systèmes satellitaires, sachant qu'elles travaillent avec des communautés éloignées, doivent aussi s'engager à aider les communautés à combler leurs besoins en TIC. Ils offrent souvent des services de planification, de consultation et de gestion ainsi que des contributions en nature pour



des programmes de financement. Bien que ces services soient essentiels dans la phase de création de l'installation d'Internet à haute vitesse sans fil, les coûts d'exploitation, particulièrement les frais de déplacement associés à l'accès à la Basse-Côte-Nord, peuvent être considérables.

Donc, on recommande une approche concertée par la communauté pour l'établissement d'un réseau Internet à haute vitesse sans fil dans la municipalité de Bonne Espérance étant donné les avantages du développement des technologies de l'information et de communication gérées par la communauté ainsi que la création d'emplois. On procéderait de la façon suivante :

#### Rencontre des intervenants

Une rencontre des intervenants intéressée dans la formation d'une structure de technologies de l'information et de communication pour la municipalité de Bonne Espérance aurait lieu dans le but de coordonner, superviser et finalement gérer la connectivité à Internet à haute vitesse sans fil livrée par satellite. Cela pourrait (et devrait) inclure toutes les communautés de la Basse-Côte-Nord.

#### Consultation

Le groupe d'intervenants effectuerait des consultations auprès des membres de la communauté et des partis intéressés pour confirmer le niveau d'engagement pour s'abonner au service d'Internet à haute vitesse et en particulier pour savoir quelles options préfèrent les abonnés potentiels.

#### Établissement

Par la suite, le groupe d'intervenants déterminerait le format (sans but lucratif, coopérative) de la structure et solliciterait les partenaires appropriés (compagnies de téléphone, fournisseurs, gouvernement, etc.)

#### Planification

La nouvelle entité créerait un plan d'affaires, particulièrement en ce qui a trait aux sources de financement et entreprendrait le développement d'un plan technologique pour l'installation de l'équipement et la prestation de services.

#### Pilotes

La nouvelle entité choisirait les endroits pilotes pour tester la faisabilité et établirait les fonctions pratiques et les capacités des diverses options.

#### Mise en œuvre

La nouvelle entité, en se basant sur l'évaluation des pilotes, adapterait les plans d'affaires et technologiques au besoin, et procéderait à l'installation de l'équipement et à la prestation de services.