



**INFORMATION AND COMMUNICATIONS TECHNOLOGY  
IN  
B.C.FIRST NATIONS COMMUNITIES**

**Report on an Environmental Scan Conducted by  
The First Nations Technology Council**

**Report Prepared March 2005**

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## INTRODUCTION

The First Nations Summit Chiefs in Assembly have mandated that ICT be recognized as basic infrastructure for First Nations communities. To better understand the current state of ICT in First Nations communities the FNTC undertook an Environmental Scan of First Nations communities, with a particular focus on ICT infrastructure and community ICT capacities. Our report on the results of this Environment Scan follows.

### First Nations Technology Council Mandate

The First Nations Technology Council mandate has been established through a series of resolutions approved by the First Nations Summit Chiefs in Assembly. These include:

- First Nations Summit Resolution #0602.12, dated June 14, 2002, which states in part:

“The First Nations Technology Council’s mandate is to develop a First Nations Technology Plan for First Nations in British Columbia which will address technology issues, including:

  - 1) high speed Internet connection;
  - 2) technology skills development;
  - 3) development of technical support.”
- First Nations Summit Resolution #0604.26, dated June 11, 2004, which states in part:

“The First Nations Summit Chiefs in Assembly hereby expand the mandate of the First Nations Technology Council to include promoting the use of technology as a tool to support the revitalization of culture and language in all First Nation communities in British Columbia.”
- First Nations Summit Resolution #0604.27, dated June 11, 2004, which states in part:

“There is a need for First Nation communities to have high speed broadband access to the Internet that includes connecting all administrative offices, schools, health centres, water treatment plants and other community-owned facilities, as well as residences.

This connectivity should be considered as important as other basic infrastructure such as an electrical distribution system, water distribution system or community road.”
- First Nations Summit Resolution #1104.12, dated November 25, 2004, which states in part:

“The mandate of the First Nations Technology Council is to develop a Technology Plan for First Nations of British Columbia. In order to develop a Technology Plan that is achievable, secures the support of both levels of government and the private sector, and can be used as a model for other communities in the province, the Council proposes to lead a proof of concept project to be known as the FIT (Fully Integrated Technologies) Community project in a community cluster of at least 4 and not more than 8 communities located in the same geographic region. The FNTC would work closely with, and take the lead from, the FIT Community Project Team made up of representatives from the communities included in the Cluster.”

## **Bridging the Digital Divide in First Nations Communities**

The Digital Divide is a phrase coined some years ago to describe the gap in the ability of some populations and some communities to compile, retrieve, and exchange information and to communicate with family, friends, colleagues, teachers, government agencies, and others, for social, economic, educational, health, administrative, and dozens of other purposes. This gap in ability has three principal components: (1) the lack of adequate telecommunications infrastructure necessary to connect to the Internet and beyond; (2) the lack of computer equipment adequate to manage the creation, storage, retrieval, and exchange of written as well as verbal information; and (3) the lack of adequate computer knowledge and user skills to enable individuals to join the Information Age and ride on the Information Highway.

While bridging the Digital Divide is not exclusively a First Nations issue in British Columbia, the fact is that many First Nations communities are located in the rural and remote regions of the province and are geographically removed from proper access to the Internet. Many community members are not sufficiently trained to take fully advantage of the opportunities for personal and community development available through the use of information and communications technology, including the Internet.

In addition to rural and remote First Nations communities needing to bridge the Digital Divide, there are First Nations members in urban communities who also living on the wrong side of the Digital Divide. Through a variety of economic, education, and social circumstances, these individuals have been unable to access the necessary training or the necessary ICT equipment to become technologically proficient and to bridge the Digital Divide.

The First Nations ICT Environmental Scan is one in a number of important ICT initiatives being undertaken by FNTC - each initiative dedicated to providing assistance to First Nations communities and First Nations members seeking to bridge the Digital Divide. In addition to conducting the ICT Environmental Scan, FNTC recently published the Community Technology Plan, a guide for communities that want to develop their own technology plan, and the Community Wireless Handbook. The handbooks are intended to provide practical, hands-on instruction for building community broadband networks, and are available online at [www.FNTC.info](http://www.FNTC.info). FNTC also hosted the First Nations Technology Conference in February 2005. In the coming months, FNTC will be working with a community partner in a proof-of-concept project to develop a FIT (Fully Integrated Technology) Community model.

In our work, FNTC recognizes and continues to respond to the fact that technology, technology infrastructure, and technology skills capacity development are the means to an end. Surmounting the Digital Divide in support of productive and sustainable First Nations communities in British Columbia has been and will remain the overarching goal for FNTC in all our activities.

## **First Nations Technology Council ICT Environmental Scan**

Beginning in November 2003, until completing our last Environmental Scan interview in April, 2004, more than 170 First Nations communities located in every region of British Columbia were contacted by telephone. The Environmental Scan included rural and remote communities as well as some First Nations communities located in the province's urban regions. The effort to collect data from this wide variety of First Nations communities has given FNTC a rich resource of information on current ICT capacity levels in BC First Nations communities as well as providing FNTC with valuable indicators of future ICT capacity development priorities. What is exciting is that we are seeing a change in how communities view ICT. Not only is there an awareness of the importance of broadband infrastructure in community plans, many First Nations are now talking about broadband infrastructure as a necessary infrastructure in joint meetings with INAC and other government departments and pushing for support in making this tool a reality.

The ICT Environmental Scan project began with the design and development of an 11-page survey questionnaire, modeled after questionnaire formats used by Statistics Canada. The Environmental Scan



interviews were usually conducted through a series of telephone calls into the community, in some instances taking a dozen or more calls in order to contact one or more knowledgeable respondents in the community. In a number of instances, the FNTC interviewer found it more expedient to visit the community to complete the survey.

The process of surveying 170 communities was much more time-consuming than anticipated. In many instances, the Environmental Scan interview took as long as 75 minutes, gathering not only responses to factual questions, but also hearing from the respondents about how desperate they are to use technology to improve life in the community, and how frustrated they are with the challenges and roadblocks they face.

The data gathered during the Environmental Scan was tabulated and loaded into a database, and is now available for analysis and reporting. FNTC is the steward of the Environmental Scan data and, while ready to share the data with other organizations and agencies working in support of BC First Nations, FNTC will carefully review each request for information from the Environmental Scan database to ensure proper use, while safeguarding the privacy of individual community information.

Thanks to the Environmental Scan, FNTC now has a detailed picture of the current ICT capacity of a vast majority of the First Nations communities in BC. This includes data on current ICT infrastructure, current technical skill levels in resident populations, current deployment of web-based social services delivery, and other ICT capacity metrics. To complete the picture, the Environmental Scan also collected data on other basic infrastructure services including telephone, water, and sewage management.

We believe the time invested in data gathering and learning about individual situations was well-spent. Not only do we have a clearer picture of First Nations connectivity in British Columbia, we now have real-life examples to use in lobbying government and private industry. This Report presents a compendium of findings from an analysis of the Environmental Scan data, and FNTC is pleased to share our findings with you.

## **Conclusions and Recommendations from the First Nations Technology Council Environmental Scan**

In reviewing the FNTC Environmental Scan data, we draw the following conclusions:

1. Our communities are continuing to struggle to bridge the Digital Divide and establish basic ICT infrastructure. One-third of First Nations communities continue to have less than 25% of homes connected to the Internet, and almost 20% of communities have at least some homes unable to access even basic telephone service. ICT infrastructure is making its way into First Nations communities, but there is much work still to do in making high-quality voice and data connectivity available to all First Nations communities and all First Nations families. Compare this to the uptake rates in British Columbia – which is considered to be the most connected province in Canada.
2. With the completion of federal (Broadband for Rural and Northern Development (BRAND) and provincial (Digital Divide) initiatives by the end of 2006, we are hopeful that broadband-grade network infrastructure will be established in more than half of our communities. Many communities are located 'in proximity' to a provincial community where a point of presence (POP) is being installed. This is a significant issue that will require joint effort by both levels of government if these communities are not to be left un-served or under-served. A business case is to be developed and submitted to the National Satellite Initiative, Round 2. If successful, this should bring connectivity to another group of communities, but this is unlikely to happen until late 2006 or early 2007. 'Last mile' to distribute connectivity throughout the community has barely been addressed. Once again, both levels of government need to work with communities so that applications that can make a difference to people's lives, i.e. distance education and telehealth, are available to everyone.

3. It is now time to turn attention to developing ICT user skills in the community. There is much work still to be done in this regard. Among all adult and professional cohorts measured in the Scan, only Band administration workers are commonly identified by their communities as having high proficiency in ICT user skills. Youth and children are also identified as being proficient or very proficient in ICT use but we suspect this proficiency to be in the realm of 'chat room' participation, downloading music, etc., rather than real computer skills. Economic development in the communities is also being impacted as more than 90% of responding communities reported local businesses need ICT training in order to make use of the Internet.
4. As set out in the First Nations Summit resolutions, ICT infrastructure must become recognized as basic community infrastructure alongside water, sewer, roads, and other infrastructure. First Nations communities are rapidly adopting this viewpoint, with more than 90% of communities describing technology as an important or very important priority for the community. And almost two-thirds of communities see benefit in getting a technology plan established.

Supported by the information developed from the Environmental Scan, FNTC makes the following recommendations to further develop ICT infrastructure and user skills capacity in all communities:

1. The current provincial definition of community is one that has a school, a hospital or a library. This definition needs to be revised to include all First Nations communities, and the provincial government needs to recognize that their efforts to bridge the Digital Divide have not succeeded until all First Nations communities are connected and until a Last Mile solution has been rolled out in every First Nations community.
2. First Nations communities need access to network-based cultural, educational, productivity, and community governance applications software. The Digital Divide should be recognized as much more than connectivity. It is rapidly becoming an Applications Divide with remote communities falling farther and farther behind with basic services such as health and education. A community broadband network has the potential to offer much more than Internet surfing and email. Application suites need to be sourced or developed, to reside on or be accessed by the local community network for use by community members seeking opportunities for personal and professional development.
3. First Nations communities need assistance in completing last-mile broadband distribution. For many First Nations communities, the 'last-mile' can be the last five miles, as community members live at the edge of community settlements and along principal roads to the community. Financial and technical planning for last-mile broadband distribution programs for First Nations communities need to recognize and respond to the dispersed housing that exists in the communities.
4. First Nations communities need ICT user skills development. We are beginning to see higher-speed connectivity being established in at least some communities. We are beginning to see computers in the communities connecting to the Internet. However, business leaders, community leaders, community learners of all ages, and community elders today do not have adequate skills or the opportunity to gain adequate skills necessary to take full advantage of available ICT infrastructure and software applications.
5. First Nations communities need community-based, advanced technical support capacity. As ICT infrastructure builds out in the communities, there is a critical need to provide ready technical support – to keep the local distribution network operating and to provide hardware and software support for computer users in the community. Communities cannot be expected to rely on out-sourced service providers who may have to travel long distances to reach the community. Technical support training needs to be provided for community members interested in helping support the community's ICT infrastructure.

6. First Nations communities have been poorly served by the lack of integration of federal and provincial connectivity initiatives. In this regard, FNTC will continue to work with government and private sector partners in an effort to coordinate ICT infrastructure and user-skills development initiatives for BC First Nations.

While we recognize that much work remains to be done, a comparison with an earlier survey of 43 First Nations communities done by the BC Rural Team in 2002 shows that significant progress has been and is being made.

### **Summary of Conclusions and Recommendations from the Broadband Internet Survey (2002)**

The Broadband Internet Survey of forty-three BC First Nations communities was completed in March 2002. The Survey was sponsored by Indian and Northern Affairs Canada (INAC) on behalf of the BC Rural Team, a federally-funded policy framework supporting federal rural policy programs. The Broadband Internet Survey was intended "to get a snapshot of community priorities and to look for opportunities where partners can be brought together to realize some of the benefits made possible by broadband technology."

The Broadband Internet Survey provided FNTC with baseline data which proved useful in developing our ICT Environmental Scan questionnaire. The assertions, conclusions, and recommendations presented in the Survey report are also useful benchmarks in assessing progress or lack of progress in delivering to BC First Nations the ICT capacities necessary to bridge the Digital Divide.

The report on the Broadband Internet Survey made five assertions:

1. Less than half of the First Nations members sampled had put in place plans to move forward with the use of technology to improve the quality of life in their communities;
2. First Nations in rural communities are unable to benefit from opportunities created by broadband technology due to lack of availability of infrastructure, lack of computer skills for both youth and adults, lack of skilled technicians available to support and maintain ICT infrastructure, and lack of computers in First Nations homes;
3. First Nations in rural communities will support broadband technology designed to support health care delivery given that rural and remote community members must travel great distances to access health care. Retention of trained medical personnel in rural and remote communities is a challenge, and health care providers in rural and remote communities need access to continuing education via the Internet to deliver quality services and to stay abreast of developing health initiatives;
4. Broadband technology will provide equal access to education for rural First Nations communities given that almost 66% of First Nations have not completed high school, and the growth in online curriculum provides for more flexibility for First Nations students and more opportunity to learn skills that are personally relevant;
5. First Nations in rural and remote communities will support broadband technology designed to support land management activity, given that lands and natural resources are the primary assets that these communities rely upon to sustain community programs and services. To manage their lands, First Nations need access to GIS and other computer-based applications, many of which are available via the Internet and require high-speed connectivity to access or to move large datasets.

As evidenced by national, regional, and community perspectives, stakeholders agree that investing in broadband technology and associated activities will catapult rural and remote First Nations into a new era of economic prosperity.

The Report went on to make three recommendations:

1. First Nations that are located within a particular region should explore the possibility of working together to build and/or share capacity and to approach government (federal, provincial, municipal) to explore ways to work within the smart communities model;
2. Canadian Rural Partnerships should design an interest-based regional perspective smart communities model based on an example taken from survey recipients;
3. Canadian Rural Partnerships should take the lead in bringing various levels of government together to work on a demonstration project that will prove the benefits broadband Internet will bring to remote and rural First Nations communities.

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For a copy of the *Broadband Internet Survey – Identifying Technology Oriented Opportunities for Rural or Remote First Nations Communities*, you are invited to contact the First Nations Technology Council at [info@fntc.info](mailto:info@fntc.info) or 866-990-9939.

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How much progress has there been in developing ICT capacity in First Nations communities since the 2002 Broadband Internet Survey? Have the challenges set out in the Survey report's assertions been conquered? The First Nations Technology Council ICT Environmental Scan provides useful current information that responds to these questions.

## REPORTING ON COMMUNITY CONNECTIVITY

The information presented in the following tables has been extracted from the FNTC Environmental Scan database intact. As a result, for some questions, we have included an "Other-responses" result. The reader should interpret Other-responses to be answers that contained information not within the range of responses expected for the particular question. "Other responses" do not include No-response. We do not report on No-responses.

### Connectivity in the home

How many homes are there in your community?

Total responding: 161 communities

<i>Less than 20 homes</i>	<b>34</b>	<i>21 to 30 homes</i>	<b>10</b>	<i>31- 50 homes</i>	<b>20</b>
<i>51-75 homes</i>	<b>27</b>	<i>More than 75 homes</i>	<b>57</b>	<i>Other responses</i>	<b>13</b>

Do all homes in your community have telephone access?

Total reporting: 160

<b>YES</b>	<b>131</b>	<b>NO</b>	<b>27</b>	<i>Other responses</i>	<b>2</b>
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**Telephone access does not equate to having telephone service. Individual homes may not have telephone service.**

Is Cable TV available in your community?

Total responding: 157

<b>YES</b>	<b>72</b>	<b>NO</b>	<b>85</b>
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Is satellite service available in your community?

Total responding: 78

<b>YES</b>	<b>75</b>	<b>NO</b>	<b>3</b>
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Does your community have five or more homes with a computer?

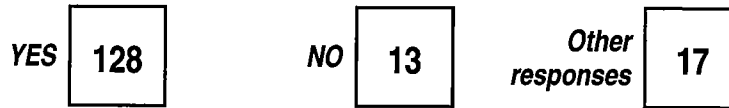
Total responding: 159 communities

<b>YES</b>	<b>137</b>	<b>NO</b>	<b>22</b>
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**Over 86% of First Nations communities have five or more homes with a computer.**

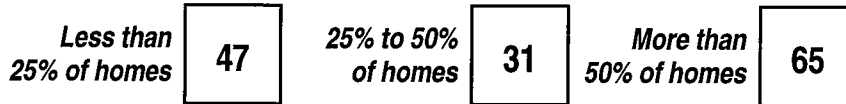
Do at least some members of your community access the Internet from home?

Total responding: 158 communities



What percentage of the homes in your community have access to Internet service?

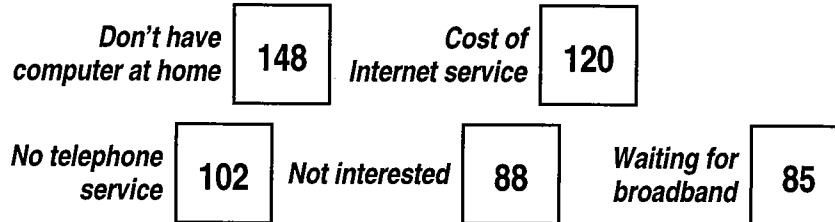
Total responding: 143 communities



**Over 45% of First Nations communities have more than half the community's homes have access to the Internet.**

What are reasons that homes in your community are not accessing the Internet?

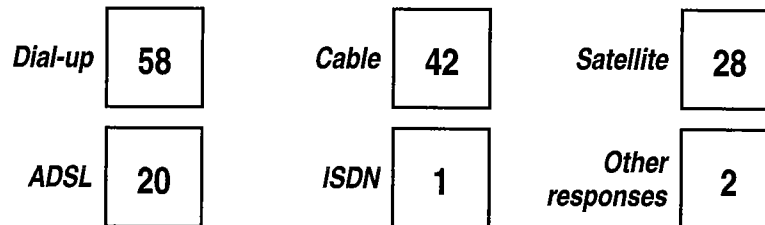
Total responding: 160 communities



### **Band office connectivity**

What type of connection to the Internet does your Band office have?

Total responding: 151 communities



Does your Band office have to pay long distance charges to connect to the Internet?

Total responding: 116 communities



On average, how much does your Band office pay for Internet connectivity per month?

Total responding: 123 communities

