# Keewaytinook Okimakanak Broadband Network

# Keewaytinook Okimakanak First Nations Telecommunications Consultation Report

May 1999

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**KEEWAYTINOOK OKIMAKANAK FIRST NATIONS**
**TELECOMMUNICATIONS CONSULTATION REPORT**

## 2.0 Community Consultation Report

### 2.1 Forward

*If we respect Elders in doing this project, then it will be remembered.*

Issac Linklater, North Spirit Lake

*Talking about this new network is good, it also raises expectations. These expectations have to be met. I think this network idea is a good thing and I enjoy what is going on.*

Douglas Meekis, Deer Lake Elder

Community consultations took place between May 3rd and May 12th, 1999 (see Table 1, below). The consultants traveled to five of the six communities affiliated with Keewaytinook Okimakanak (Northern Chief's Council). Interviews in Red Lake included McDowell Lake Band members, key Keewaytinook staff, and the CEO of the Margaret Cochenour Hospital. Interviews with K-Net Services staff and the Principal of the Wahsa Distance Education High School were held in Sioux Lookout.

**Table 1: Community Consultations - May 3 to 13, 1999**

| Community | Arrival | Departure | Consult |
|---|---|---|---|
| | | | |
| Red Lake | May 3, 1999 | May 4, 1999 | Rowlandson |
| McDowell Lake | May 3, 1999 | May 4, 1999 | Rowlandson |
| Poplar Hill | May 4, 1999 | May 4, 1999 | Rowlandson |
| Deer Lake | May 5, 1999 | May 6, 1999 | Rowlandson/Hoshizaki |
| North Spirit Lake | May 6, 1999 | May 7, 1999 | Rowlandson |
| Keewaywin | May 7, 1999 | May 8, 1999 | Hoshizaki |
| Fort Severn | May 10, 1999 | May 11, 1999 | Rowlandson/Hoshizaki |
| Sioux Lookout | May 12, 1999 | May 13, 1999 | Rowlandson |

### 2.2 Process

Initial consultations were conducted via e-mail with K-Net representatives in each First Nation. The consultant introduced himself and posed a number of questions that

related to each community. This e-mail discussion was facilitated by Darlene Rae, Program Manager for K-Net Services.

The consultant sent additional briefing material to each of the K-Net representatives. This material described in ordinary language relationships among digital encoding, network capacity, and First Nation access to broadband networks (see Appendix). Community representatives were asked to share this material with others and to think of persons who might want to attend a community meeting to talk more about this subject.

On arrival in each First Nation, the consultant and the K-Net representative visited various people (Chiefs, CHRs, constables) and places (schools, Clinics, Band Offices, & stores) to talk about the purpose of the consultation and to invite local people to a community information meeting. In Poplar Hill and Deer Lake, the consultant also spoke – with translation – on community radio.

There was a minimum of one information meeting held in each community. At this meeting, the consultant reviewed a handout that defined telecommunications terms and identified primary uses for broadband networks (see Appendix). At the end of each meeting those in attendance were invited to participate in structured interviews (see Appendix).

## 2.3 Aims

Community consultations were structured by three objectives. The first objective was to collect specific information in each community concerning possible applications and the needs that a wide area broadband network could address. The second objective was to stimulate a broadly-based dialogue about networking in each community. The third and final objective was to initiate a public education program through public meetings, distribution of written materials, and by providing hands-on training and demonstrations.

## 2.4 Limitations

These findings are limited by a number of factors. These factors include the short time frame in which the community visits took place, the time of year, and accessibility for first language speakers. Overall, the consultant spent about one day in each community. Community organizing by local K-Net representatives facilitated local participation. However, tight travel schedules did limit the scope of local consultation.

Consultations were also are constrained due to seasonal concerns. The Deer Lake information session, for example, conflicted with the beginning of the pickerel spawn. Similarly, the Fort Severn information session coincided with the height of the local goose hunt. Many men and women participated in these traditional activities. In North Spirit Lake, a summer thunderstorm grounded flights between communities.

Finally, the consultations were limited by the lack of first language support. In Deer Lake, for example, one Elder required full translation at the information session. Fortunately, a person in attendance volunteered to provide translation. The Elder emphasized how important it was to produce syllabic versions of the briefing materials and spoke of the continual need to include Elders in the consultation process.

## 2.5 Community Context

> *Will the young people be willing to return home? The older people will stay -- but what about the youth? We need to do something so they won't leave their territory.*
>
> Chief Albert James

The Deer Lake, Fort Severn, Keewaywin, McDowell Lake, North Spirit Lake, and Poplar Hill First Nations are geographically distant from the institutions, businesses and consumers that drive and sustain Canadian social and economic well-being. The effect of this distance is generally reflected in a vastly uneven standard of living. Specifically, it is observed in the invention of local strategies to overcome institutionalized isolation.

Pregnant women leave their communities weeks before giving birth in order to ensure the safety of their unborn children. Elders suffer silently through chronic pain so that they can avoid long trips out. Adults leave or relocate their families in order to continue their education. Youth spend their adolescence in high schools hundreds of kilometers from home. Health professionals triage endlessly.

## 2.6 Infrastructure

The communications infrastructure that has been laid over these communities is a touchstone for their physical isolation. Virtually non-existent for some and wholly inadequate for all, the current telecommunications network more closely resembles a dirt road than a super-highway. Importantly, the political leadership in Keewaytinook Okimakanak has identified telecommunications improvements as a self-determining means for achieving community wellness and development.

The communities have jointly recognized the failure of compensatory measures aimed at mitigating the negative effects of isolation. They have moved forward to develop regional solutions by building local infrastructure – such as wireless local area networks and satellite-based internet working. These technical and human resource investments anticipate access to specific broadband services.

Communities have forged a cooperative solution to meet broadly-based needs. They have adopted a system-wide approach for achieving their telecom goals. This includes the practical integration of partners in the planning process and an "applications focus," – a pragmatic consolidation of information technologies.

## 2.7 K-Net Services

During the past five years, community efforts to improve the quality and level of network access have been supported by K-Net Services. This partnership has produced one of the finest examples of results-oriented co-management currently in operation.

K-Net Services developed as a regional bulletin board service in 1994. Initially, the K-Net BBS employed text-based conferencing tools to connect First Nations people in remote communities and, subsequently, as a way to facilitate dialogue between learners and instructors -- for example, Band Manager Trainee and Aboriginal Teacher Assistant programs. This application demonstrated both intensive interest among First Nations communities and highlighted inherent regional and technological barriers.

### Community Focus

Since 1994, K-Net has become a horizontally integrated clearinghouse for Indigenous telecommunications issues and applications in northern Ontario.
As the telecom arm of Keewaytinook Okimakanak (Northern Chief's Council), K-Net assumes a leadership position in the development of new media content and delivery projects. Its main strengths are its capacity to initiate and support complex computer and telecom projects and its ability to broker and sustain broadly-based partnerships.

### Constituent Focus

K-Net's focus is on managing access issues. It facilitates national and regional telecommunications advocacy work, coordinates communications training and employment programs in 17 First Nations, provides e-mail gateway services for more than 2,000 users, provides BBS interface for post-secondary course distribution, and delivers technical Help Desk services to approximately 60 First Nations. Currently, K-Net Services remotely maintains 23 local Linux and NT servers and represents a community-based investment of approximately $1M.

### Interim Community Applications

Deer Lake, Fort Severn, Keewaywin, McDowell Lake, North Spirit Lake, and Poplar Hill First Nations work with K-Net to communicate local demand for telecommunications services. The success of this relationship is evident in the "networked thinking" that occurs at the community level. K-Net is also a platform for articulating skills-based needs and for initiating projects that demonstrate how services can be delivered and supported at a distance – for instance the planned Tele-psychiatry pilot and the OHI pilot describe below.

### Red Lake-Ontario Heart Institute Pilot Project

K-Net took a leading role in brokering a tele-health pilot project partnership between the Ottawa Heart Institute and the Margaret Cochenour Hospital in Red Lake, Ontario – a rural 28 bed facility that serves approximately 7,000 residents. The purpose of the pilot was to demonstrate the efficacy of making cardiology expertise available to persons with heart disease who live in remote communities.

The hospital utilized a satellite-based tele-consult unit jointly developed by Computing Devices Canada and the Ottawa Heart Institute. The technology permits interactive communication between a cardiologist based in Ottawa and remote patient populations. Human interaction occurs via a 21" screen. Diagnostic peripherals such as digital stethoscapy and document cameras provide additional real-time information to the cardiologist. The unit operates at 30 frames per second with a real-time transmission speed of 768 kilobits per second – scalable to 1.5mps.

During the trial consults followed a standard protocol. The Ottawa Heart Institute provided on-site training for nurses and physicians. Follow-up training was also provided. Participants were referred to the project by local physicians. Patient blood work would be completed in advance of the consult with results being sent to OHI. OHI Cardiologist's interviewed patients, reviewed on-line ECG results, and followed up with a diagnostic referral . A diagnosis and referral follows. The average consult time was between 30 and 45 minutes.

The hospital recently completed the six month technology trial. Although participation was lower than expected -- the actual number of consults was 20, with an expected sample of 60 or about 10 per month – the technology was positively assessed. Primary benefits included evidence of improved standing on surgical wait lists and elimination of patient travel and wait times.

Trial results have been used to successfully fund the purchase of the $250,000 unit. Annual maintenance costs for the Margaret Cochenour Hospital are $10 to $15k and the hourly operating cost is approximately $150.00._ Long-term use of the technology likely will require on-site technical expertise. Bandwidth or satellite segment costs are still outstanding. The hospital plans are to use the unit for professional consults in other areas such as dermatology, ENT, and orthopedics.

The pilot highlights the practical value of implementing a tele-consult protocol in remote settings. It demonstrates how patient demand can be aggregated in small communities and how patient needs for diagnostic expertise can be met at a relatively low capital and operational cost.

## 2.8 Community Applications

*We would like access to the banks like other people so that we can pay our bills*

*without having to stick the cheque in the mail and wait three weeks for the credit card to clear.*

Madeline Stoney, Fort Severn

*It wouldn't feel so confined like it used to be. If we had network access we could keep up with what's happening all over – about economic issues. We'd be able to have a closer community with those who aren't on reserve – we could keep in touch.*

Margaret Lawson, McDowell Lake

The introduction and use of broadband network services in Keewaytinook Okimakanak is bundled with three primary expectations. One expectation is that network implementation will correspond with the implementation of a local baseline for community service delivery. All communities, for instance, will require residential telephony and sufficient human resource development.

Another expectation is that the network will be a self-determining means for change in these First Nations. Simply put, the network will have to effectively deliver services that have been defined as local or regional priorities. Finally, network services are expected to foster and advance community well-being. System partners will need to demonstrate how enhanced network access is improving conditions in each community.

## 2.9 Community Well-Being

Community well-being is a common thread that is woven through all aspects of the community consultation. Well-being was described both as a goal state – something that the introduction of network services should contribute to -- and as a process that will support and sustain network implementation.

Three dimensions of well-being emerged from community discussions. The first dimension addresses the concept of readiness – it surveys community-based capacity to implement new media services. A second dimension focuses on access and proposes meaningful standards for community participation. A final dimension broaches the question of wellness and invites system partners to join with community interest to conceptualize a broadly-based approach to network development.

### Community Readiness

Keewaytinook Okimakanak communities are ready to move forward. Evidence of this willingness is concrete. Two of the communities own, operate, and maintain their own cable television networks. Four of the communities provide local learner access to the Wahsa Distance Education High School.

Although two communities essentially have no telephone services, all communities

have broad-based access to local and internet worked modes of communication. The hardware is maintained by local people who have made personal skills investments to learn how to repair, troubleshoot, and enhance community services. Their training role means that many others now use the technology daily.

Community enthusiasm to introduce new network services reflects current service delivery problems. The need for local access to basic support and care services is acute. Accordingly, people see enhanced network access as a way to incrementally improve the delivery and support of basic services. Mental health workers, Nurses, CHRs, educators, and constables all articulate specific ways that networked access can help them be more effective in the way that their community work is supported and delivered.

## Community Access

Very little time was spent explaining the dynamic capacities of broadband services during the consultations. Rather, community people readily expressed their expectation that network services incorporate a high degree of interactivity. Access is a process for these First Nations – a circle for coming and going, making and taking, knowing and asking, and for speaking and listening.

Communities addressed access as an interchange and expressed specific access benchmarks. A fundamental concern was that everyone in the community have access to both the networked technologies and the skills to use them effectively. This standard was described in particular terms. Times and places need to be established so that youth, elders, and adults are able to learn how to use the network in an atmosphere that is both comfortable and meaningful.

Others spoke about access as a two-way street. They felt that an important part of access to a global network was being able to produce and distribute information that represented community interests, activities, and expertise.

Accordingly, several participants cautioned that basic internet access should anticipate the higher bandwidth needs of content developers and that broadband services accommodate community capacity to deliver as well as receive services.
The latter point was underscored by a belief that network services should facilitate access among communities of interest – a standard that envisions WAN management of multi-point interactive video-conferences between groups such as Indigenous women, political leaders, or local eco-tourism operators.

## Community Wellness

Many who participated in the consultation shared a concern that network services should make a tangible contribution to the community. Wellness was framed as a

holistic concept that included healing family relationships, promoting intergenerational understanding, treating illnesses, supporting healthy lifestyles, advancing local businesses, and facilitating personal choices to acquire new skills and knowledge.

Consequently, participants view the introduction of broadband services in human rather than technological terms. Information, health, and educational technologies are seen as a means for applying human energy and attention to collective problems. The WAN is a toolbox. It supports multiple projects in a community context – building, renovation, restoration, and repair. In each case, the outcomes are measured against improvements in the community's capacity for wellness.

## Community Innovation

These dimensions of well-being represent shared concerns about broadband services and identify functional priorities and opportunities for designing and implementing a new network. They also constitute a collective rationale for initiating a system-wide reconfiguration of community development – an undertaking that balances the risks of technological change against an acute need for community-based innovation.

## Community Baseline

During the consultation, many people expressed the feeling that the introduction of new network services should address specific local and regional standards. These include affordable and high quality individual line telephone services for residential users, a safe and secure facility – hub -- for accessing broadband services, and human resource support for diffusing and extending community-wide use of health, education, and information technologies.

Communities also identified an additional component. They expressed impatience with institutional service providers in the development and delivery of services via new media. Combined, these standards establish a community baseline for implementing and sustaining services across the network.

## Residential Telephony

Concern was expressed by community people about both the level and quality of telecommunications services. For example, both Keewaywin and North Spirit Lake have no access to residential line telephony. People also identified problems related to the quality of service. For instance, in Deer Lake, problems in the local switched environment have hampered efforts to wireline route internet access to the Nursing Station. Similarly, Fort Severn's satellite-based system restricts data interchange speeds between individual users and Internet service providers.

There was general support across the communities that these service issues be addressed as a first step in the development of broadband access. Participants communicated the importance of being able to pick up a phone and call someone.

They also emphasized how access to individual line service could facilitate use of computers and the internet in the home. Some expressed this type of access as a way to reduce the gap between the kids who surf the net and their parents and elders.

## Local Facilities

Although each community has established one or more access sites, these sites have only a limited capacity to sustain enhanced network services. None of the sites, for example, permits the level of privacy necessary for confidential tele-consultations. Most sites are small and ill-suited to group training.

Most are also subject to environmental extremes such as winter cold, summer heat, dampness, exposure to fine air born particulate from dusty roads, and wood stove ash. Accordingly, the current access configuration both restricts the potential for meaningful human interaction and also proposes significant technology problems related to system maintenance, life span, and reliability.

Some communities have looked forward to anticipate how services might be aggregated in a single access facility. In North Spirit Lake, the local education authority is proposing the development of an Adult Learning Centre. The proposed facility would provide a safe, central location for adult learners and also have the potential to provide enhanced network access. This model addresses concrete human and technical standards for access and also suggests ways in which diverse community service providers could share bandwidth resources and facilities.

## Human Resource Support

The need for a standard level of human resource support was highlighted over and again during the community consultations. Participants in every sector emphasized the importance of providing adequate skills training and knowledge. Most agreed that a fundamental component of this training should be timely access to focused user support and upgrading.

Training needs were expressed differently. Technical people clearly stated their needs to know more about how the network functions and how it can be better maintained and repaired. Professionals challenged network planners to design a system that left them unencumbered. Community people communicated their need to feel comfortable and collectively involved with the diffusion of new broadband services. Generally, people felt that training and user support would help them to be more effective at what they do and more aware about how the network could be used to meet community aims.

## Institutional Service Providers

External service providers were identified as a component of the community baseline. Participants expressed a need to know the level of commitment that institutions and agencies were bringing to this process. Similarly, people were interested in how these organizations were going to develop distributed services. It was recognized that broadband access represents a new opportunity for health, education, and social service bodies to incorporate community content and to reflect local needs.

Consequently, questions were raised about the financial implications of delivering these kinds of services – How would they be paid for and who would pay for them? -- and about timing issues – When would institutional service providers be prepared to make these services available and at what level?

## Community Applications

Although participants expressed many ideas about why and how broadband services would meet community-based needs – such as policing, governance, and economic development – most applications focused on addressing local health or educational concerns. For example, close family ties in most communities were identified as a problem for those seeking mental health, addictions or family services support – clients sometimes perceived that their privacy was compromised. Participants felt that having someone at a physical and familial distance could provide that person with immediate help and support.

## Healthcare Applications

The common priority for broadband development and implementation was health care services. The need for distributed health informatics_ was expressed across sectors and was described in several forms. Most often, people talked about the tele-consultative opportunities that network access could bring.

Another aspect of service was access to continuing medical education. Similarly, health care professionals and community people identified ways that broadband services might let them share best and local practices with other communities.

## Tele-consults

Participants expressed an acute local need for access to a whole range of health professionals. The most familiar form of access was the tele-consult. Direct visual contact with a physician via videoconferencing elicited an intuitive understanding of value from participants. Specifically, the tele-consult was identified as a way to provide

regular (pre-arranged) and timely (emergent) access for health professionals and as a way to remove barriers for community people.

Community access to health professionals is uneven – local visits by physicians are infrequent and nursing coverage in some communities is only part-time. Lack of adequate basic services highlights local frustration with gaining access to specialists – such as ENTs, cardiologists, psychiatrists, radiologists, obstetricians and pediatricians. Participants felt that the tele-consult would functionally improve the coordination and delivery of these types of services.

Tele-consultative access was also identified as a way to improve quality of life for community members. This issue was particularly relevant for Elders. Participants expressed concern that Elders have to fly out of the community for doctor consults in Sioux Lookout, Winnipeg, and Thunder Bay. They felt that local diagnostic access would reduce the physical discomfort, disorientation, and stress that Elders now experience – particularly during the Winter months.

### Continuing Medical Education

Health care professionals are largely unsupported in the delivery of community-based services. They are frustrated by the lack of opportunity to expand their knowledge and improve their practical skills. Nurses, CHRs, and dieticians all indicated their need to have localized access to meaningful continuing medical education programs. Current forms of CME access were criticized as being limited in scope and of being very uni-directional – learners in the communities felt that they could not effectively interact with instructors or other learners.

Local health professionals identified broadband services as a way to increase learner choice, instructional interactivity, and the practical relevance of CME programs. In particular, they indicated a high level of dissatisfaction with CME programs that did not incorporate ways to directly interact with instructors_ – via e-mail or audio-graphics – or permit modularized/flexible learning. Many expressed an interest in seeing how internet-based learning applications could meet these needs.

### Best Practices

Health professionals and community people agreed that the delivery of health services would improve if communities could engage each other in a cycle of improved practice. The Keewaytinook Okimakanak communities share many demographic and environmental characteristics – common concerns that could be addressed by improved inter-network communications.

Participants stated their hope that the implementation of a wide area network would anticipate ways that communities of interest could interact with each other to share best

practices. Their notion of interactivity was described in a variety of ways: the development of databases documenting local medicinal plants, facilitated listservs for nurses and CHRs, regular inter-community videoconferences to share solutions, and the delivery of local expertise to health professionals who have an interest in northern and remote practice.

## Education and Training Applications

People in the communities readily identified with the educational uses of new media and broadband services. Most participants indicated that distance played a key role in learner decisions to delay or discontinue studies. Many felt that increased local points of access would aid bridging between elementary and secondary schools and ease transitions back in to the formal education system.

In particular, improved access was related to increased choices for different types of learners. Like health care, participants expressed a tremendous need at the community-level. In addition to the delivery of educational services, people expressed their concern that education be bundled with high quality and relevant access to learner resources.

## Learner Choices

Broadband access to wide area network services signals new learner choices in Keewaytinook Okimakanak communities. Participants identified widespread demand for learning opportunities. Several vocational and academic learner profiles emerged: youth and adults who wish to pursue post-secondary education, unemployed adults who would like to upgrade their secondary education; youth who wish to complete their secondary education; Adults in the workforce who need specialized or job-related skills training, and Adults who require regular professional development.

Currently, only Wahsa Distance Education High School provides comprehensive culturally-focused access to community-based courses. People in the communities would like to see learner choices expanded. Specifically, they see an opportunity to use ISDN conferencing services and internet-based applications such as Placeware to increase the quality, relevance, and focus of community-based learning.

## Learner Resources

Community participants also identified the central relationship between learner access to quality education and learner access to quality educational resources and support services. There was widespread agreement that if new media were to improve local learner choices, that it also be used to encourage the creation of new bases of knowledge and reduce longstanding learner barriers.

An acute learner need in communities is the development of first language materials. These materials are now being produced in some communities but not in others. Many people spoke of the ways that new media could bridge the barriers between brilliant speakers and youth who are struggling to retain their local dialect. They also spoke of a need to produce more syllabic learning materials and interactive language exercises.

Community learners do not have the same level or depth of access to resources that on-campus learners have. Although this is less of an issue for those enrolled in skills-based training programs, it poses a significant problem for learners pursing academic programs or research-oriented studies such as treaty rights or land claims. Accordingly, some participants suggested that the introduction of new media services coincide with the development of digital collections, databases and search engines that would connect learners with specific resources.

Others supported content development by urging that regional collections be designed and organized. One idea presented was a multiple overlay GIS that would provide on-line interactive access for learners. A first layer would show communities connected by the Severn River system, a second overlay would show traditional land use, a third layer would show names in syllabics, a fourth layer would show images and voice clips of elders, and so forth.

The community consultations also indicated that internet-based technologies could support learners when they did leave the community. People talked enthusiastically about the use of e-mail. They also saw how tele-counseling could reduce loneliness among learners who are away at college or university. Many also saw the value in using the technologies to bring families together – especially for learners who are away from home for the first time.

## Next Steps

This report has described how the Deer Lake, Fort Severn, Keewaywin, McDowell Lake, North Spirit Lake, and Poplar Hill First Nations have prepared themselves to introduce local access to broadband services in a shared network environment. People who participated in the consultations demonstrated how they could use telecommunications to practically change and improve the quality and level of services available in their communities.

It should be noted that these communities have accomplished this work despite the fact that their level of telecommunications services has been sub-standard or non-existent for many years. Indeed when the network is implemented, two of the communities will skip a telecom generation of service altogether. This places them at the forefront of networked development – and among the so-called Smart Communities.

This step forward emphasizes the risks that these communities have assumed and underscores the incumbent responsibilities of network designers, service providers, and

support organizations to deliver a rigorous and flexible service. It also anticipates the coordination of intensive training and support work at the community level – a job that has been practically assumed by K-Net Services.

Many people in Keewaytinook Okimakanak communities have already conceptualized how new media will improve community well-being. This considerable investment now waits on the practical demonstration of benefits that the proposed broadband network will bring.

## 2.10 Deer Lake First Nation

> *Children are learning their history and their language with all of the tools available in the computer.*
>
> Alvina Fellowes, Teacher

### Community Profile

The Deer Lake First Nation serves a total member population of 850 – approximately 91 percent of members live in the community. Almost 25 percent of the total population are younger than age 10. An additional 25 percent are between the ages of 10 and 19 years of age. Fewer than four percent of the total population is age 60 or older. Approximately 38 percent of the adult population is unemployed or is receiving some form of social assistance.

Deer Lake lies approximately 175 km north-northwest of Red Lake and 483 km north of Sioux Lookout. The community covers an area of 1650 hectares. The curvature of the lake and rock outcropping effectively separate the main residential areas in to east and west zones.

The community is accessible by winter road for six to 10 weeks each year and by air on a year-round basis. Vehicle fuel costs range from $8.50 to $10.00 per gallon. The cost of return airfare to Red Lake is $228.00. Airfare to Sioux Lookout is $514.00.

Several major infrastructural initiatives in Deer Lake are at or near completion. The 1998 completion of the hydro electric distribution system secured a reliable power supply for the community. Community-wide sewage and water infrastructure is currently under construction. Deer Lake First Nation has also wired the community with a coaxial cable television service. The new Health Centre is under construction and is scheduled for completion in 1999.

### Community Informatics

Deer Lake First Nation has access to a number of community information services. These include local and long distance telephony, satellite-fed cable and direct-to-home television, and off-air rebroadcast of public and educational radio and television

programming. These external signals are complemented by local radio, television, and computer access points.

Voice-grade services are provided by Bell Canada. The local loop is analog switched. Network access is via a SR Telecom microwave protocol. Local access to networked television services is widespread. Households have the choice of purchasing either a locally owned cable television service or a satellite-based service such as StarChoice or Expressvu.

In addition to these entertainment services, people in the community also have several off-air options. These include cultural and educational programming via Wawatay Television, the Wawatay Radio Network (WRN), the Wahsa Distance Education High School, TVOntario, and the Ontario Legislative Channel.

Local communications services are provided through Deer Lake Cable Television and the Deer Lake Community Radio Society. The Cable Television service maintains a local access site. Community members use video narrowcast to post messages and make live announcements. The access site is open from 9:00 am to 4:30 pm and is staffed by local youth. Community Radio services wrap around WRN programming. Community radio is staffed by volunteers and is in constant use. It is a primary medium for local information programming in first languages.

Internet access in Deer Lake is routed via a MSAT outbound/DirecPC inbound configuration. Transmission speeds range from a low of 4.8 kbps outbound to a high of 384 kbps inbound. Servers manage wireless and wireline local area networks. The wireless network bandwidth is 1.5 mps. These networks interconnect all major users – education, health, administration, and policing – and are distributed from access sites at the Band Office and the David Meekis Memorial School.

Deer Lake has made a significant investment in personal computing technologies. The school maintains as many as 25 PCs (spread among Local Education Authority staff, instructors, and the Wahsa access site) and almost 40 MacIntosh computers – Macintoshes, PowerMacs, and iMacs. An additional 15 PCs are distributed among Band administrative personnel and service providers in the community.

**Network Capacity**

Data communications is severely limited in Deer Lake. Like other Keewaytinook communities, the primary local bottleneck is the MSAT outbound connection. When multiple users are internetworking they experience long transmission delays. The current configuration has been developed as an interim solution. It provides basic access to internet surfing and mail services.

Telephony line noise is also a problem in Deer Lake. For example, line noise has delayed wireline routing of LAN traffic to the Nursing Station. Similarly, noise has also

been identified as a significant problem for individuals who use LD to connect with their internet service provider.

Network and user services are reliable and well-supported in Deer Lake. Bell Canada and Deer Lake Cablevision both employ local service technicians. K-Net Services remotely maintains its community servers and provides support to a local technician. In addition to technical repair and maintenance, this technician also ensures that community access sites are open and provides hands-on training.

**Network Applications**

Participants in Deer Lake identified the following applications:

Education

Native languages – fluency and syllabic literacy.
Adult education and upgrading for local people working for Band run organizations.
Early childhood education training, headstart skills/competence.
Adult literacy programs.
Board and administrative training.
Certification of local trades people to ensure a standard of construction.
Professional development.
Accreditation.
Incorporation of Aboriginal ideas – everyday living, basic lifeskills.
Interaction and networking with colleagues.
Programs that relate to community services.
Bridging and transition courses to prepare students for high school.

Health

Continuing Medical Education.
Non-emergency consultations with Doctors.

See Appendix for Interview Results

## 2.11 Fort Severn First Nation

> *There is no high school so children must leave the community when they are still very young.*
>
> Elijah Stoney, Mental Health Worker

## Community Profile

The Fort Severn First Nation serves a total member population of 470 – approximately 78 percent of members live in the community. Almost 25 percent of the total population are younger than age 10. An additional 19 percent are between the ages of 10 and 19 years of age. Fewer than six percent of the total population is age 60 or older. Approximately 25 percent of the adult population is unemployed or is receiving some form of social assistance.

Fort Severn lies approximately 725 km northeast of Sioux Lookout. The community is located in the Northern Delta region of the Severn River. For Severn is the most isolated community in the Sioux Lookout zone. Some tourist outfitters have recently begun to market the community as an eco-tourism destination. The community supports a Northern and a Band operated store, a hotel, and a restaurant.

The community is accessible via Shamatawa by winter road for up to 10 weeks each year and by air on a year-round basis. Vehicle fuel costs range from $9.00 to $11.00 per gallon. The cost of return airfare to Sioux Lookout is $866.70.

## Community Informatics

Fort Severn First Nation has access to a number of community information services. These include satellite-based local and long distance telephony, satellite-fed cable and direct-to-home television, and off-air rebroadcast of public and educational radio and television programming. The community radio station was not operational during the community consultations.

Voice-grade services are provided by Bell Canada. The local loop is analog switched. Network access is via satellite. Local access to networked television services is widespread. Households have the choice of purchasing either a locally owned cable television service or a satellite-based service such as StarChoice or Expressvu.

In addition to these entertainment services, people in the community also have several off-air options. These include cultural and educational programming via Wawatay Television, the Wawatay Radio Network (WRN), the Wahsa Distance Education High School, TVOntario, and the Ontario Legislative Channel.

Internet access in Fort Severn is routed via two MSAT outbound /DirecPC inbound configuration. Transmission speeds range from a low of 9.6 kbps outbound to a high of 384 kbps inbound. Servers manage a wireless 1.5 mps local area network. These networks interconnect all major users – education, health, administration, and policing – and are distributed from access sites at the Band Office and the Wasaho School.

Fort Severn has made a significant investment in personal computing technologies. The school maintains 19 PCs. Seven PCs are housed in a separate Wahsa Learning Centre. An additional 17 PCs are distributed among Band administrative personnel and

service providers in the community.

**Network Capacity**

Data communications is severely limited in Fort Severn. Like other Keewaytinook communities, the primary local bottleneck is the MSAT outbound connection. When multiple users are internetworking they experience long transmission delays. The current configuration has been developed as an interim solution. It provides basic access to internet surfing and mail services.

Although the satellite-based telephone is subject to transmission delays, it apparently does not interfere with users who use LD to connect with their internet service provider. Several individuals indicated that they regularly logged on to the internet from their home phone line.

Network and user services are reliable and well-supported in Fort Severn. Bell Canada and Fort Severn Cablevision both employ local service technicians. K-Net Services remotely maintains its community servers and provides support to a local technician. In addition to technical repair and maintenance, this technician also ensures that community access sites are open and provides hands-on training.

**Network Applications**

Participants in Fort Severn identified the following priorities:

Network Services

Building a network to connect all of the communities.
Making internet more accessible
Videoconferencing.

Health and Education

Bringing more education services in to the communities.
Supporting the health service for people who are sick.
Mental health and health services.
Policing, more frequent court times.

## 2.12 Keewaywin First Nation

> *The main building blocks [for the broadband network] would be the K-Net network that is now in place and the new health and education facilities that are now in place.*
>
> Chief Maggie Chisel

## Community Profile

The Keewaywin First Nation serves a total member population of 539 – approximately 78 percent of members live in the community. More than 25 percent of the total population are younger than age 10. An additional 19 percent are between the ages of 10 and 19 years of age. Slightly more than five percent of the total population is age 60 or older. Approximately 27 percent of the adult population is unemployed or is receiving some form of social assistance.

Keewaywin lies approximately 240 km north of Red Lake and 360 km north of Sioux Lookout. The community is the hub for traditional hunting, trapping, and fishing for Sandy Lake people. Keewaywin received Band status in 1985 and in 1991 a tripartite agreement was signed to make reserve lands available for Keewaywin and five other Nishnwabe-Aski Bands.

The community is accessible by winter road for six to 10 weeks each year and by air on a year-round basis. Vehicle fuel costs range from $8.00 to $12.00 per gallon. The cost of return airfare to Red Lake is $246.10. Airfare to Sioux Lookout is $421.58.

## Community Informatics

Keewaywin First Nation has limited access to community information services. These include radio relay phone service, direct-to-home television, and off-air rebroadcast of public and educational radio and television programming. These external signals are complemented by local radio and computer access points.

Voice-grade services are provided by Bell Canada. The community has no residential access to local loop phone services. Instead, the community has limited service into the community with low level radio relay into the analog radio backbone. Many homes subscribe to satellite-based services such as StarChoice or Expressvu.

In addition to these entertainment services, people in the community also have several off-air options. These include cultural and educational programming via Wawatay Television, the Wawatay Radio Network (WRN), the Wahsa Distance Education High School, TVOntario, and the Ontario Legislative Channel.

Local communications services are provided Keewaywin Community Radio Society. Community Radio services wrap around WRN programming. Community radio is staffed by volunteers and is used infrequently. It is a primary medium for local information programming in first languages.

Internet access in Keewaywin is routed via a MSAT outbound/DirecPC inbound configuration. Transmission speeds range from a low of 9.6 kbps outbound to a high of 384 kbps inbound. Servers manage a wireless local area network (a network diagram is attached) that achieves speeds up to 1.5 mps. These networks interconnect all major users – education, health, and Band administration – and are distributed from an

access site at the Band Office.

Keewaywin has made a significant investment in personal computing technologies. The school maintains as many as 20 PCs, most of which are located in the computer lab. Additional PCs are distributed among Band administrative personnel and service providers in the community.

**Network Capacity**

Data communications is severely limited in Keewaywin. Like other Keewaytinook communities, the primary local bottleneck is the MSAT outbound connection. When multiple users are internetworking they experience long transmission delays. The current configuration has been developed as an interim solution. It provides basic access to internet surfing and mail services.

Computer network and user services are reliable and well-supported in Keewaywin. K-Net Services remotely maintains its community servers and provides support to a local technician. In addition to technical repair and maintenance, this technician ensures that community access sites are open and provides hands-on training.

**Network Applications**

Participants in Keewaywin identified the following network applications:

Priorities

Residential telephone services.
Videoconferencing for meetings with Chiefs.
Videoconferencing for access to distance education.

## 2.13 McDowell Lake First Nation

> *Since we are really starting from the bottom, we could set up easily because nothing would have to be replaced. We could build network services right in to the planning of the community.*
>
> Ida James, Band Administrator

**Community Profile**

The McDowell Lake First Nation serves a total member population of 29 – approximately 30 percent of members live in the community at some point during the year. About 20 percent of the total population are younger than age 10. An additional 21 percent are between the ages of 10 and 19 years of age. Approximately, 10 percent of the total population is age 60 or older.

McDowell Lake lies approximately 155 km northeast of Red Lake. The community was established by the James family. It has been a long-time hub for trappers and commercial fishermen.

The community is accessible by float plane only. Some provisions are brought in via skidoo from the winter road – open for 6 to 10 weeks each year. Generally, fuel and equipment is flown in. The cost of a float charter is approximately $500.00 and is dependent on weight cargo.

**Community Informatics**

McDowell Lake First Nation has no access to community information services. Bell Canada's radio relay drop was disconnected in 1996. Seasonal residents use HF Radio as an emergency communications service.

**Network Capacity**

There is no data communications service in McDowell Lake .

**Network Applications**

Participants in McDowell Lake identified the following network applications:

Health and Education

Distance education and skills training.
For health it would be making things like treatment, health education programs, and health information more accessible.

## 2.14 North Spirit Lake First Nation

*Health people here understand what the community needs are and can see when services are needed before a problem becomes too far out of control. They need to be listened to.*

Audrey Kakekagumick, NAADAP worker

**Community Profile**

The North Spirit Lake First Nation serves a total member population of 394 – approximately 77 percent of members live in the community. Almost 25 percent of the total population are younger than age 10. An additional 23 percent are between the

ages of 10 and 19 years of age. Fewer than five percent of the total population is age 60 or older. Approximately 40 percent of the adult population is unemployed or is receiving some form of social assistance.

North Spirit Lake lies approximately 180 km north of Red Lake and 280 km northeast of Sioux Lookout. The original settlement dates to the early 1930s. The families in the community of North Spirit Lake are closely related to Deer Lake First Nation. The community obtained band status in 1985 and has their own land base.

The community is accessible by winter road for six to 10 weeks each year and by air on a year-round basis. Vehicle fuel costs range from $9.50 to $12.00 per gallon. The cost of return airfare to Red Lake is $246.10. Airfare to Sioux Lookout is $515.74.

Several major infrastructural initiatives in North Spirit Lake are at or near completion. The community embarked on ambitious capital projects in the last few years. The community completed a hydro electric distribution system and is presently installing sewer and water systems in the community.

The new Health Centre is under construction and is scheduled to be completed in 1999. A contaminant spill closed the Nursing Station and the Victoria Linklater School for more than a year. Both repopened in November 1998.

**Community Informatics**

North Spirit Lake First Nation has limited access to community information services. These include one radio relay phone drop, direct-to-home television, and off-air rebroadcast of public and educational radio and television programming. These external services are complemented by local computer access points at the Band Office and Health Centre.

Voice-grade services are provided by Bell Canada. The community has no residential access to local loop phone services. Instead, the community has limited service into the community with low level radio relay into the analog radio backbone. Many homes subscribe to satellite-based services such as StarChoice or Expressvu.

In addition to these entertainment services, people in the community also have several off-air options. These include cultural and educational programming via Wawatay Television, the Wawatay Radio Network (WRN), the Wahsa Distance Education High School, TVOntario, and the Ontario Legislative Channel. Local communications services were provided by the North Spirit Lake Community Radio Society. The station ceased operation in 1998.

Internet access in North Spirit Lake is routed via a MSAT outbound/DirecPC inbound configuration. Transmission speeds range from a low of 9.6 kbps outbound to a high of 384 kbps inbound. Servers manage a wireless local area network (a network diagram is attached) that achieves speeds up to 1.5 mps. These networks interconnect all major

users – education, health, policing, and Band administration – and are distributed from an access sites at the Band Office and Health Centre.

North Spirit Lake has made a small investment in personal computing technologies. There are only two PCs networked in the school (one in a classroom and the other in the administration office). An additional 9 PCs are distributed among the Health Centre, Band Administration, and the NAPs Office.

**Network Capacity**

Data communications is severely limited in North Spirit Lake. Like other Keewaytinook communities, the primary local bottleneck is the MSAT outbound connection. When multiple users are internetworking they experience long transmission delays. The current configuration has been developed as an interim solution. It provides basic access to internet surfing and mail services.

Computer network and user services are reliable and well-supported in North Spirit Lake. K-Net Services remotely maintains its community servers and provides support to a local technician. In addition to technical repair and maintenance, this technician ensures that community access sites are open and provides hands-on training.

**Network Applications**

Participants in North Spirit Lake identified the following priorities:

Health

Diabetes, parenting skills and approaches, personal and family nutrition, drug and alcohol abuse, STD's.
Health training, focus on youth.
Occupational Health and Safety on the job site. Health – there would be a big savings in transportation costs.
Transfer to Red Lake hospital (e.g. for cardiac consult) is more useful.
Health workshops for people working in mental health, for CHRs, for nutritionists, for nurses and for people in the community.

## 2.15 Poplar Hill First Nation

*A big stumbling block is the complete lack of special services, no counselling, no enrichment, no special education program or computer classes where the whole class can participate.*

Howard Comber, Principal

## Community Profile

The Poplar Hill First Nation serves a total member population of 316 – approximately 94 percent of members live in the community. Almost 27 percent of the total population are younger than age 10. An additional 23 percent are between the ages of 10 and 19 years of age. Fewer than seven percent of the total population is age 60 or older. Approximately 42 percent of the adult population is unemployed or is receiving some form of social assistance.

Poplar Hill lies approximately 125km north of Red Lake and 280 km north of Sioux Lookout. The community land base is approximately 70 hectares. The community is undertaking community-wide infrastructural improvements that include residential housing development and the completion of a community sewage and water system.

The community is accessible by winter road for six to 10 weeks each year and by air on a year-round basis. Vehicle fuel costs range from $8.50 to $10.00 per gallon. The cost of return airfare to Red Lake is $228.98. Airfare to Sioux Lookout is $472.94.

## Community Informatics

Poplar Hill First Nation has access to a number of community information services. These include local and long distance telephony, direct-to-home television, and off-air rebroadcast of public and educational radio and television programming. These external signals are complemented by local radio, television, and computer access points.

Voice-grade services are provided by Bell Canada. The local loop is analog switched. Network access is via a SR Telecom microwave protocol. Local access to networked television services is widespread. Many households have purchased DTH television services such as StarChoice or Expressvu.

In addition to these entertainment services, people in the community also have several off-air options. These include cultural and educational programming via Wawatay Television, the Wawatay Radio Network (WRN), the Wahsa Distance Education High School, TVOntario, and the Ontario Legislative Channel.

Local communications services are provided through the Poplar Hill Community Radio Society. Community Radio services wrap around WRN programming. Community radio is located in the Band Office and is staffed by volunteers. The radio station is in near constant use. It is a primary medium for local information programming in first languages.

Internet access in Poplar Hill is routed via a MSAT outbound/DirecPC inbound configuration. Transmission speeds range from a low of 9.6 kbps outbound to a high of 384 kbps inbound. Servers manage a wireless local area network that achieves speeds of 1.5 mps (a network diagram is attached). This network interconnects all major users

– education, health, administration, and policing – and is distributed from access sites at the Band Office and the Abe Scatch Memorial School.

Poplar Hill has made a moderate investment in personal computing technologies. The school five networked PCs. Two are located in a storage room and three are located in the Principal's office. Because the Principal's Office occasionally floods, the three PC's are crowded in a dry corner of the room. An additional 10 PCs are distributed among Band administrative personnel and service providers in the community.

**Network Capacity**

Data communications is severely limited in Poplar Hill. Like other Keewaytinook communities, the primary local bottleneck is the MSAT outbound connection. When multiple users are internet working they experience long transmission delays. The current configuration has been developed as an interim solution. It provides basic access to internet surfing and mail services.

Computer network and user services are reliable and well-supported in Poplar Hill. K-Net Services remotely maintains its community servers and provides support to a local technician. In addition to technical repair and maintenance, this technician also ensures that community access sites are open and provides hands-on training.

**Network Applications**

Participants in Poplar identified the following network applications:

<u>Education and Health</u>

Anything that would improve access to knowledge and skills that people need right now.

There is really no access to doctors here – Teleconsults could do that.

There needs to be a way to get involved with prevention programs.